

UNIVERSITY OF LIVERPOOL

ANNALS  
OF  
ARCHAEOLOGY  
AND  
ANTHROPOLOGY.

ISSUED BY THE  
INSTITUTE OF ARCHAEOLOGY

EDITED BY  
J. L. MYRES  
IN COLLABORATION WITH

F. P. BARNARD  
R. C. BOSANQUET  
J. G. FRAZER  
T. W. GANN

J. GARSTANG  
J. G. MILNE  
P. E. NEWBERRY  
T. G. PINCHES

VOLUME II <sup>2</sup>  
MCMIX 1909

LONDON: CONSTABLE & COMPANY, LTD.  
LIVERPOOL: AT THE UNIVERSITY PRESS

57638

L

C. TINLING AND CO., LIMITED  
PRINTERS TO THE UNIVERSITY PRESS OF  
LIVERPOOL, VICTORIA STREET

174498

H. P.



## CONTENTS

	PAGE
List of Plates ... ..	v
List of Illustrations in the Text ... ..	ix
Liverpool University Institute of Archaeology : List of Officers, Committees, and Staff. Programme of Lectures ... ..	xiii
Catalogue of a Teaching Collection of Representative English Coins, from 1066, at the Institute of Archaeology in the University of Liverpool. F. P. BARNARD, M.A. ... ..	i
A Prehistoric Vase in the Museum of Spalato. A. M. WOODWARD, B.A. <i>With Plate I</i> ... ..	27 ✓
Disease and History. W. H. S. JONES, M.A. ... ..	33
Suggestions for a Scheme of Classification of the Megalithic and Analogous Prehistoric Remains of Great Britain and Ireland. GEORGE CLINCH. <i>With Plates II and III</i> ... ..	46 ✓
A Bird Cult of the Old Kingdom. PERCY E. NEWBERRY ... ..	49
On a Recently Discovered Section of the Roman Wall at Chester. ROBERT NEWSTEAD, M.Sc., A.L.S., etc. <i>With Plates IV-X</i> ... ..	52 ✓
<i>Appendix I. With Plates XI, XII</i> ... ..	67 ✓
<i>Appendix II. With Plate XIII</i> ... ..	70 —
Prehistoric Finds at Matera and in South Italy generally. T. E. PEET, B.A. <i>With Plates XVIII-XXI</i> ... ..	72 ✓
Human Skulls from Sisma in Asia Minor. Professor A. M. PATERSON, M.D., and Dr. W. BROAD ... ..	91
Obituary : F. G. Hilton Price. J. GARSTANG, D.Sc. <i>With Plate XIV</i> ... ..	94 ✓
Dea Febris : A Study of Malaria in Ancient Italy. W. H. S. JONES, M.A. ... ..	97

	PAGE
Excavations at Abydos, 1909. Preliminary Description of the Principal Finds. JOHN GARSTANG, D.Sc. <i>With Plates XV, XVI, XVII</i> ... ..	125
Impressions of Seals from Abydos. PERCY E. NEWBERRY, M.A. <i>With Plates XXII, XXIII, XXIV, XXV</i> ... ..	130
Two Cherokee Charms. JOHN B. DAVIS ... ..	131
The Liver Eater : A Cherokee Story. JOHN B. DAVIS ... ..	134
REVIEW. von Oppenheim. Excavations at Tell Halaf, in Northern Mesopotamia. JOHN L. MYRES, M.A. ... ..	139
Two Prehistoric Figurines from Asia Minor. T. E. PEET, B.A. <i>With Plates XXVI-XXVII</i> ... ..	145
Early Civilization in North Greece : Preliminary Report on Excavations in 1909. A. J. B. WACE, M.A., and M. S. THOMPSON, B.A. <i>With Plates XXVIII-XXXIII</i> ... ..	149
Prehistoric Mounds in Macedonia. A. J. B. WACE, M.A., and M. S. THOMPSON, B.A. <i>With Plate XXXIV</i> ... ..	159
Carchemish and its neighbourhood. D. G. HOGARTH, M.A. <i>With Plates XXXV-XLII</i> ... ..	165
Note on the Inscription on the Eastern Lion at Tell-Ahmar. L. W. KING, M.A. <i>With Plate XXVII</i> ... ..	185
Who were the Romans? A Note on some Recent Answers. T. E. Peet, B.A. ... ..	187



## LIST OF PLATES

- I. Prehistoric Vase in the Museum of Spalato, and other fragments from sites in the Balkan Peninsula.
- II. Typical megalithic and analogous remains of Great Britain and Ireland. Figures 1—7.
- III. „ „ Figures 8—16.
- IV-X. *Chester : Roman Wall : Excavations*, 1908.
  - IV. (1) Roman Wall, shewing the coursing of the rubble work.  
(2) Wolf Tower, with upper portion of Roman Wall.
  - V. (3) Upper portion of Roman Wall, looking South.  
(4) Roman Wall, looking South.
  - VI. (5) Roman Wall (interior) looking North.  
(6) Roman Wall (interior) looking South.
  - VII. Samian ware from excavations at Chester, 1908.
  - VIII. Roman Wall and Fosse. Plan of excavated area.
  - IX. Roman Wall and Fosse. Section of excavated area.
  - X. Mouldings found in front of Roman Wall.
  - XI. Roman concrete foundation in Bridge Street, Chester : plan.
  - XII. Roman concrete foundation in Bridge Street, Chester : section.
  - XIII. Palaeolithic stone axe from excavations in St. John Street, Chester.
  - XIV. Frederick George Hilton Price : *in memoriam*.

XV-XVII. *Antiquities from Abydos, Upper Egypt.*

XV. Eighteenth Dynasty Jewellery from an undisturbed tomb deposit.

XVI. (1) Sixth Dynasty Coppersmith's outfit and models, with alabaster table.

(2) Eighteenth Dynasty tomb-deposit, found undisturbed.

XVII. (1) Twelfth Dynasty Daggers.

(2) Eighteenth Dynasty Pottery vase.

(3) Sixth Dynasty typical tomb deposit.

XVIII-XXI. *Prehistoric Finds from Matera and South Italy generally.*

XVIII. Sketch Map—District round Matera.

XIX. Fig. 1. Murgia Timone: Rock-cut tomb: section and plan.

Fig. 2. Murgia Timone: Fibula from tomb II.

Fig. 3. Matera: Vase of Aegean type.

Fig. 4. San Lorenzo: Vase of 'Dolmen-type.'

Fig. 5. Murgia Timone: Stone mound with cist-grave (cassetta).

Fig. 6. Monte Timmari: cremation-ossuary.

[Fig. 7. Pottery, type *a*: grey ware, incised before firing.  
(*Printed on Plate XXI.*)

[Fig. 8. Pottery, type *b*: polished ware incised after firing. (*Printed on Plate XXI.*)

Fig. 9. Pottery, type *b*: polished ware incised after firing, showing influence of 'Dolmen-ware.'

XX. Fig. 10. Pottery, type *b*: Black undecorated variety: Taranto.

Fig. 11. Pottery, type *b*: Taranto.

Fig. 12. Pottery, type *c*: Painted ware, 'a fasce larghe.'  
[*Plate XX includes also figs. 18, 19, 20 below.*]



- XXI. Figs. 13 and 14. Pottery, type *d*: Fine painted ware.  
 Fig. 15. Pottery, type *d*: Painted pottery: Balkan types.  
 Fig. 16. Serra d'Alto: fine painted ware; typical designs. (*On page 85 of the text.*)  
 Fig. 17. Pottery, type *d*: Painted ware.  
 [Plate XXI includes also figs. 7, 8 above.]  
 [Figs. 18-19. Pottery, type *f*: Bronze Age ware: incised (*on Plate XX*).]  
 [Fig. 20. Pottery, type *f*: Bronze Age ware: typical designs (*on Plate XX*).]
- XXII-XXV. *Impressions of seals from Abydos.*
- XXII. Sealings of Kha-sekhemui.
- XXIII. Sealings of Neter-Khet.
- XXIV-V. Private Sealings: Second Dynasty.
- XXVI-XXVII. Prehistoric figurines from Adalia, Asia Minor.
- XXVIII-XXXI. *Antiquities from excavations in Thessaly.*
- XXVIII. Lianokladhi. Three-roomed house in Stratum III: plan.
- XXIX. (1) „ The mound known as Paleómylos.  
 (2) „ Interior of the three-roomed house in Stratum III, showing *Pithoi* in position.
- XXX. (1) „ Red-on-white ware: bell-shaped cup.  
 (2) „ „ „ large bodied jar.
- XXXI. (1) „ Geometric painted ware.  
 (2) „ 'Minyan' ware: ring-footed vase, and angular bowl.
- XXXII. (1) „ Serrated flakes of flint, and bone pin.  
 (2) „ Fragments of painted pottery.
- XXXIII. Tsani Maghoula.  
 (1-2) „ Primitive Figurine: (1) front, (2) side.  
 (3) „ Red-on-white ware: cup with ribbon handle and solid patterns.  
 (4) „ Figurine: (a) front, (b) side.
- XXXIV. (1) Macedonian mounds: primitive incised pottery.  
 (2) „ „ geometrical painted pottery.

XXXV-XLII. *Hittite monuments from Carchemish (Jerablus), and other sites.*

- XXXV. (1) Jerablus : Acropolis : Slab No. 1. Two men on lion.  
 (2) " " " [2 is figured in the text.]  
 (2) " " " 3. Standing figure with censer.
- XXXVI. (1) " " " 4. Processional figures.  
 (2) Kellekli : Hittite *Stela* No. 1.  
 (3) " " " No. 2, face 1.  
 (4) Tell Ahmar : Royal *Stela* (b).
- XXXVII. (1) " Winged lion.  
 (2) " " Cuneiform inscription.
- XXXVIII. " *Stela* (c) : The long Hittite inscription.
- XXXIX. " " (c) : The sculptured face 4.
- XL. (1) Tell Ahmar : *Stela* (c) : Inscribed face 3 : fragment B.  
 (2) " " (d 4) : Processional figures.  
 (3) " " (d 1) : Horse-headed demons.  
 (4) " " (d 6) : Winged genius.
- XLI. (1-6) Hittite sculptures from Arslan Tepe, near Malatia.
- XLII. Hittite monuments from Aleppo.  
 (1) Lion in black basalt : in the Castle.  
 (2) Basalt *stela* : in the collection of M. Marcopoulos.  
 (3) Eagle in basalt : in the French Consulate.



## LIST OF ILLUSTRATIONS IN THE TEXT

	PAGE
Sketch Map of South Italy, shewing the district round Matera...	73
Serra d'Alto : fine painted ware, typical designs, Fig. 16 ...	85
Lianokladhi : example of geometrically ornamented pottery ...	151
Diagram explaining the stratification of Tsani Maghoula ...	155
Diagram explaining the suggested synchronisms among early sites in North Greece ... ..	157
Jerablus : Acropolis, Slab No. 2 : winged female figure in relief	170
Kellekli : Hittite <i>Stela</i> No. 2, face 1 ... ..	173
Kellekli : <i>Stela</i> No. 2 : Hittite inscription on faces 1, 2 and 3 ...	173





# UNIVERSITY OF LIVERPOOL INSTITUTE OF ARCHAEOLOGY

(FOUNDED JUNE 23, 1904)

## *Patron*

H.R.H. PRINCESS HENRY OF BATTENBERG

## *Presidents*

THE EARL OF DERBY

THE COUNTESS OF DERBY

## *Vice-Presidents*

RALPH BROCKLEBANK, ESQ.

THE RT. HON. SIR JOHN BRUNNER,  
BART., M.P.

PROFESSOR BOYD DAWKINS, F.R.S.

F. C. DANSON, ESQ., F.S.A.

ARTHUR J. EVANS, ESQ., F.R.S.

WILLIAM JOHNSTON, ESQ.

PROFESSOR EDUARD MEYER

REV. W. MACGREGOR

JOHN RANKIN, ESQ.

PROFESSOR RIDGEWAY, D.Sc.

REV. PROFESSOR A. H. SAYCE, M.A.

## *General Committee*

LADY BROCKLEBANK

LADY FORWOOD

LADY HILL

MRS. DALE

MRS. GRANT

MRS. RANKIN

MRS. RATHBONE

MRS. J. SMITH

THE LORD BISHOP OF LIVERPOOL

THE VICE-CHANCELLOR

C. J. ALLEN, ESQ.

PROFESSOR BOSANQUET, M.A., F.S.A.

PROFESSOR CATON, M.D.

T. GIBSON, ESQ.

SIR JOHN GRAY HILL

C. SYDNEY JONES, ESQ.

ROBERT MOND, ESQ.

PROFESSOR NEWBERRY, M.A.

REV. M. LINTON SMITH, M.A.

JAMES SMITH, ESQ.

## *Members of the Faculty of Arts :*

A. MAIR, ESQ., M.A. (*Dean*)

PROFESSOR MACKAY, M.A., LL.D.

PROFESSOR MUIR, M.A.

PROFESSOR MYRES, M.A., F.S.A.

PROFESSOR REILLY, M.A., A.R.I.B.A.

PROFESSOR STRONG, M.A., LL.D.

## *Hon. Treasurer*

A. L. REA, ESQ.

## *Hon. Auditors*

W. GRISEWOOD & SON

## *Hon. Secretary*

PROFESSOR J. GARSTANG, M.A., D.Sc.

## *Staff Assistant*

HERR HORST SCHLIEPHACK

## *Assistant Secretary*

MISS F. DAVEY

## *Bankers*

BANK OF LIVERPOOL, LTD., HEYWOOD'S BRANCH

# INSTITUTE OF ARCHAEOLOGY

## SPECIAL COMMITTEES

### *Finance*

THE RT. HON. SIR JOHN T. BRUNNER,	PROFESSOR MYRES
<i>Chairman</i>	PROFESSOR NEWBERRY
F. C. DANSON, ESQ., F.S.A.	A. L. REA, ESQ., <i>Hon. Treasurer</i>
JOHN RANKIN, ESQ.	W. GRISEWOOD, ESQ., <i>Hon. Auditor</i>
PROFESSOR BOSANQUET	PROFESSOR GARSTANG, <i>Hon. Secretary</i>

### *Excavations in British Honduras*

PROFESSOR BOSANQUET	J. F. IRVINE, ESQ.
F. C. DANSON, ESQ., F.S.A.	PROFESSOR MACKAY
PROFESSOR FRAZER	D. P. McEWAN, ESQ.
T. W. GANN, M.D.	PROFESSOR NEWBERRY
PROFESSOR GARSTANG	A. L. REA, ESQ., <i>Hon. Treasurer</i>
T. GIBSON, ESQ.	PROFESSOR MYRES, <i>Hon. Secretary</i>
	J. WOODSEND, ESQ.

### *Excavations in Egypt, 1910*

RALPH BROCKLEBANK, ESQ.	REV. W. MACGREGOR, M.A.
MONSIEUR JEAN CAPART	ROBERT MOND, ESQ.
( <i>Musées Royaux, Bruxelles</i> )	DR. WALDEMAR SCHMIDT
J. J. DOBBIE, ESQ.,	( <i>National Mus., Copenhagen</i> )
( <i>Royal Scot. Mus., Edinburgh</i> )	JAMES SMITH, ESQ.
H. M. KENNARD, ESQ.	H. S. WELLCOME, ESQ.

### *Hittite Excavations*

THE RT. HON. SIR JOHN T. BRUNNER,	H. MARTYN KENNARD, ESQ.
BART., M.P.	DR. LUDWIG MOND
	ROBERT MOND, ESQ.



# INSTITUTE OF ARCHAEOLOGY

## UNIVERSITY STAFF

*Classical Archaeology : Professorship instituted in 1906*

ROBERT CARR BOSANQUET, M.A., F.S.A.

*Classical Geography : Lectureship instituted in 1907*

JOHN LINTON MYRES, M.A., F.S.A.

(GLADSTONE PROFESSOR OF GREEK, 1907)

*Egyptology : Professorship founded by Sir John Brunner in 1907*

PERCY EDWARD NEWBERRY, M.A.

*Methods and Practice of Archaeology : Professorship founded by  
Mr. John Rankin in 1907*

JOHN GARSTANG, M.A., B.Litt., D.Sc., F.S.A.

(READER IN EGYPTIAN ARCHAEOLOGY, 1902)

*Social Anthropology : Professorship instituted in 1907*

JAMES GEORGE FRAZER, M.A., D.C.L., Litt.D., LL.D.

*Mediaeval Archaeology : Professorship instituted in 1908*

FRANCIS PIERREPONT BARNARD, M.A., F.S.A.

## SPECIAL LECTURERS AT THE INSTITUTE

*Assyriology : T. G. PINCHES, LL.D. (appointed 1904)*

*Numismatics : J. GRAFTON MILNE, M.A. (appointed 1907)*

*Central American Archaeology : T. W. GANN, M.D. (appointed 1908)*

# INSTITUTE OF ARCHAEOLOGY

## UNIVERSITY COURSES AND OTHER LECTURES

### 1904. AUTUMN TERM.

- Public Lectures.....' Sources of Ancient History.'  
' The Egyptian Scarab.'
- Special Lectures ..... ' Early History of Medicine.'
- University Course..... ' Outlines of Egyptian Archaeology.'

### 1905. SPRING TERM.

- Special Lectures ..... ' Delphi,' ' Olympia,' and ' Delos.'

### SUMMER TERM.

- Public Lecture ..... ' Recent Discoveries in Egypt.'
- Special Lectures ..... ' Eleusis,' ' Corinth,' ' Troy.'

### AUTUMN TERM.

- Public Lectures..... ' Modern Research in Assyria and Western Asia.'  
' The Methods and Practice of Archaeology.'
- University Course..... ' Outlines of Egyptian History and Archaeology.'

### 1906. SPRING TERM.

- Special Lectures ..... ' Greek Art.'  
' Historical Relations of Palestine with Arabia,  
Babylonia, Egypt and Assyria.'

### AUTUMN TERM.

- Public Lectures..... ' Sparta.'  
' The Hittites from the Monuments.'
- University Courses ... ' Introduction to the Study of Antiquity.'  
' Outlines of the History of Greek Art.'  
' Rome : Republic and Empire.'

### 1907. SPRING TERM.

- University Courses ... ' Chronology of Ancient Egypt.'  
' Outlines of the History of Greek Art.'  
' Athens in the Fifth Century B.C.'  
' Interpretation of Roman Monuments.'
- Public Course ..... ' Gods of Healing in Egypt and Greece.'

### AUTUMN TERM.

- University Courses ... ' Introduction to the Study of Antiquity.'  
' Greece in the Fifth Century B.C.'  
' Civilisation of Ancient Rome.'
- Public Courses ..... ' The Gods of Greece.'  
' The Progress of Exploration.'



1908. SPRING TERM.

- Public Courses ..... 'The History of Ancient Egypt.'  
'Geographical Conditions of Mediterranean Civilization.'  
'Archaeological Problems in the Classical Texts prescribed for the Arts Course.'

SUMMER TERM.

- University Course ... 'Athens in the Age of Pericles.'  
Public Courses ..... 'Recent Discoveries in Greek Lands.'  
'Outlines of Egyptian Archaeology.'

AUTUMN TERM.

- University Courses ... 'Outlines of the History of Antiquity.'  
'Greece in the Fifth Century B.C.'  
'The Roman Empire B.C. 31—A.D. 180.'  
'Greek Vase-paintings.'  
'Language and Literature of Ancient Egypt.'  
Public Courses ..... 'History of Egypt from the Eighteenth Dynasty to the Ptolemaic period.'  
'Geographical Condition of Mediterranean Civilization.'  
'Embroideries of Greek Lands and the Near East.'

1909. SPRING TERM.

- University Courses ... 'Outlines of the History of Antiquity.'  
'Greece in the Fifth Century B.C.'  
'The Roman Empire B.C. 31—A.D. 180.'  
Public Course ..... 'Some Masterpieces of Greek Sculpture.'

AUTUMN TERM.

- University Courses ... 'Greek Architecture and Sculpture.'  
'Outlines of the History of Antiquity.'  
'Greece in the Fifth Century B.C.'  
'The Roman Republic B.C. 202—A.D. 31.'  
'Tacitus, *Agricola*, with special reference to the Archaeology of Roman Britain.'  
Public Courses ..... 'Geographical Conditions of Mediterranean Civilization.'  
'Land and Monuments of the Hittites.'  
'Egyptian Art.'  
Special Lectures ..... 'Early Civilization in North Greece.'  
'Homeric Art.'

## EXPEDITIONS

1902-3-4	Egypt : Beni Hassan and Negadeh.
1904-5	Edfu and Hierakonpolis.
1905-6	Esna and Kostamneh (Nubia).
1906-7-8-9	Abydos.
1907-8	Asia Minor and North Syria.
1908-9	British Honduras.
1909	Neolithic Sites in Thessaly.
1910	Meroë (Sudan).



# CATALOGUE OF A TEACHING COLLECTION OF REPRESENTATIVE ENGLISH COINS, FROM 1066, AT THE INSTITUTE OF ARCHAEOLOGY IN THE UNIVERSITY OF LIVERPOOL. 1909

BY PROFESSOR F. P. BARNARD

This collection has been formed for the assistance of students who may wish to be introduced to the study of English Numismatics. In the selection of the coins two principles have been followed: so far as possible, typical pieces have been chosen, and none but examples in the best procurable condition have been admitted. Coins in any state, if rare, are acceptable enough for filling up gaps in the cabinet of the collector when none better can be got, but for educational requirements good specimens alone are of use. It follows that considerations of expense must as a rule limit a teaching collection to those pieces which are the least scarce, though these are not necessarily the least representative. The contrary is rather the case. At the same time the collection which we have so far been able to bring together is not in itself sufficient for our purpose, and will therefore be supplemented by electrotypes of such unobtainable coins as are needed to complete the illustration of the currency from the Norman Conquest to the death of George III. No gold or silver later than the reign of Charles II will appear in either series, but this is the less to be regretted because after the Restoration the issues in the precious metals, their experimental troubles being practically over, became more or less stereotyped. From that time, too, besides this decrease in historical importance, their artistic attraction steadily waned. The copper issues, however, which then began, did not as a whole share this aesthetic decadence, and moreover being in the tentative stages that the gold and silver monies had left behind, succeeded to the interest lost by the higher denominations: an interest accentuated by the story of their struggles with the irregular coinages.

## TRAY I

No. 1.—E. iii, Noble. 4th Gold and 3rd Noble Issue; 2nd Period; 1360-9; London Mint. Title, King of France, omitted in accordance with the terms of the Treaty of Bretigny, 1360; but Lord of Aquitaine added. The establishment of a gold coinage by E. iii was brought about by the growth of commerce, and by the closer contact with France, the more advanced currency of which country we were stimulated, perhaps forced by necessity, to copy. 'The rede noble ys yreuerenced by-fore the rode.' (*Piers Plowman*, I, 471.)

The *obverse* type is supposed to commemorate the defeat of the French at the battle of Sluys in 1340, England's first naval victory (so *Chronicle de Melsa* in 1396). *Cp.*, too, the quotation in Selden, *Mare Clausum*, 1636, II, xxv, 438: 'For foure things our Noble sheweth to me, King, Ship, and Swerd, and Power of the See . . . . The Sea was kept, and thereof he [E. iii] was Lord; Thus made he Nobles coined of Record.' Current for 6s. 8d., *i.e.*, Half a Mark. Fineness of Noble and its parts 23 carats,  $3\frac{1}{2}$  grains, pure gold, to  $\frac{1}{2}$  a grain alloy: the 'Old Standard.'

No. 2.—E. iii, Half Noble. Same Issue and Period as No. 1. London Mint. Also called the 'Maille' Noble. 'Maille' originally = Half a Penny, and survives in 'Blackmail': L.L. 'metallia,' 'medallia' = money.

No. 3.—E. iii, Quarter Noble. Same Issue as No. 1, but 3rd Period; 1369-77; London Mint. Also called the 'Ferling' Noble. 'Ferling' = a quarter of anything.

No. 4.—E. iv, Angel. 3rd Gold Issue; 1471-83; London Mint; *m.m.* Annulet. Regular *mint marks* begin in this reign, and die out in C. ii's time. Current for 6s. 8d.: the value of the Noble had been raised to 8s. 4d. The *Rose* Noble of this reign ran for 10s. Fineness of Angel as No. 1 above.

No. 5.—E. vi, Testoon or Shilling. 2nd Issue; London Mint; dated 1549; *m.m.* Arrow. Base Silver, 3 parts fine, 9 parts alloy. Coins of this Issue are the first dated pieces in the



English series. The name Testoon was taken from the name of the first French coin to bear the *teste* [tête] of the king, that of Louis xii. The term did not last long in England. Note that Renaissance tastes are superseding Gothic. See, *e.g.*, the Italian oval cartouche shield set on a scrolled bracket on the *Rev.* of this coin; and the last Lombardic lettering finally disappears in Eliz.'s reign.

- No. 6.—E. vi, Shilling. 3rd Issue; 1551-3; London Mint; *m.m.* Tun. Nearly Standard Silver. Coins of this Issue are the first in the English series to bear a mark of value. This is the 'Shovel-board Shilling':—'With me the unthrifts every day, With my face downwards do at Shove-board play.' (Taylor the Water-Poet, *The Trauailles of Twelve Pence*, 1622.) Hence this coin is often found with its *Ob.* more worn than its *Rev.* (*Cp.*, too, Shak. *M. Wives*, I, i, 159; and *H. iv*, B. II, iv, 206.)
- No. 7.—Phil. and Mary, Shilling. 1554-8; London Mint; no *m.m.* 'Still amorous, and fond, and billing, Like Philip and Mary on a shilling.' (Butler, *Hudibras*, III, i, 579.) The position of the heads, which does not appear elsewhere in the English series, was probably copied from the gold double ducat of the kg. and queen's common ancestors, Ferdinand and Isabella of Spain, and was originally taken from an ancient Roman type.
- No. 8.—Eliz., Hammered Shilling. 1558-61; London Mint; *m.m.* Cross Crosslet.
- No. 9.—Eliz., Milled Shilling. 1561-6; London Mint; *m.m.* Star. The first issue of milled coins in England. (See Note on No. 4 in Tray II.)
- No. 10.—Jas. i, Shilling. 1st Issue; 1603-4; London Mint; *m.m.* Thistle; 'Exurgat' legend.
- No. 11.—Jas. i, Shilling. 2nd Issue; 1604-25; London Mint; *m.m.* Rose; 'Quae Deus' legend.
- No. 12.—Ch. i, Shilling. 3rd Type (The Lace Collar, or 'Falling Band,' has taken the place of the earlier Ruff.); 1639; London Mint; *m.m.* Triangle.
- No. 13.—Commonwealth, Shilling. London Mint; Dated 1653; *m.m.* Sun. The Royalists jestingly described the *Reverse*

design as 'A pair of breeches for the Rump,' hence the Commonwealth coins were often called 'Breeches Money.'

No. 14.—Jas. i, Half-crown. 2nd Issue; 1604-25; London Mint; *m.m.* Rose; 'Quae Deus' legend.

No. 15.—Ch. i, Half-crown. 3rd. Type (The Lace Collar has replaced the Ruff.); 1635; London Mint; *m.m.* Coronet.

No. 16.—

No. 17.—

No. 18.—

No. 19.—Penny Token, 17th century Series. *Ob.* In the centre a large 1<sup>d</sup>.; legend round 'THOMAS · FITZHVGH · AT · Y<sup>e</sup> · GOLDEN ·' *Rev.* In the centre an anchor; legend round, 'ANCKOR · IN · GVTER · LANE' . . . . . (Williamson's edition of Boyne, I, 623/1304.) This series of Tokens was not authorized, like the 'Harringtons' it succeeded, but was privately issued by tradesmen, corporations, overseers, &c., throughout England, in town and country. These pieces were sometimes known as 'Traders'; 'the *Tokens* which every Tavern and Tippling-House (in the days of late Anarchy among us) presum'd to stamp and utter for immediate Exchange, as they were passable through the Neighbourhood, which tho seldom reaching farther than the next street, or two, may haply in after times come to exercise and busie the learned *critic* what they should signifie, and fill whole Volumes with their conjectures.' (Evelyn, *Numismata*, 1697, p. 16.) The issue of the excellent copper  $\frac{1}{2}$ d. and  $\frac{1}{4}$ d. of Ch. ii, in 1672 (see No. 18 in Tray VI) did what repeated statutes and proclamations had been unable to effect and drove these light Tokens out of circulation.

No. 20.—Halfpenny Token, 17th century series. *Ob.* In the centre a rose slipped, *i.e.*, with its stalk; legend round, 'MARY · LONG · IN · RVSELL ·' *Rev.* In the centre, 'HER HALFE PENNY · M·L·'; legend round, 'STREET · IN · COVENT · GARDEN ·' (Williamson's Boyne, I, 715/2434.) The Rose was a tavern kept by Wm. and Mary Long, and, after the death of the former in 1661, by his widow Mary, whose burial is entered in the register of St. Paul's, Covent Garden, as on 29th Jan., 1673/4. It was



a resort of Dryden's. (Pepys, *Diary*, 3rd Feb., 1663/4.) 'We out again to the Rose Taverne, and there I did give them a tankard of cool drink, the weather being very hot.' (*Ibid.* 13th May, 1668.) It became famous afterwards as Wills' Coffee House. (See also Shadwell, *The Scowlers*, 1691.) It was at this house that on 14th Nov., 1712, the duel was arranged in which Lord Mohun was killed by the Duke of Hamilton; and Hogarth's *Rake's Progress* (1735) III, shows a room in it. It disappeared in 1766 to make way for the enlargement of Drury Lane Theatre by Garrick, but the sign was preserved and set up on the wall of the playhouse. (See an engraving in Pennant's *Hist. of London*, I, 100.)

- No. 21.—Farthing Token, 17th century Series. *Ob.* In the centre a ship; legend round, 'AT · THE · SHIP · WITHOVT.'  
*Rev.* In the centre <sup>'S'</sup>W·M; legend round, 'TEMPLE · BARR · 1649.' (Williamson's Boyne I, 764/3066.) The letters in the middle of the *Rev.* denote—'S' the surname, and 'W' and 'M' the christian names, of husband and wife: thus the names in this case (which have not been traced) might have been Wm. and Mary Smith. This is the regular arrangement of such initials on these tokens, and is found also on signs of the period. This inn was in Anne's reign used as a headquarters of Freemasons, and was still in existence in June, 1756, when it is mentioned in an advertisement as 'The Ship tavern in the Butcher row near Temple bar.' Ship Yard preserves its name.

## TRAY II

- No. 1.—E. vi, Sixpence. 3rd. Issue; 1551-3; Southwark Mint; *m.m.* Y, for Sir John Yorke, Master of the Southwark Mint. The first sixpence issued.
- No. 2.—Phil. and Mary, Sixpence; London Mint; dated 1554; *m.m.* Lys. (See Note on No. 7 in Tray I.)
- No. 3.—Eliz., Hammered Sixpence. London Mint; dated 1566; *m.m.* Porteuillis.

- No. 4.—Eliz., Milled Sixpence. London Mint; dated 1562; *m.m.* Star. The first issue of milled coins in England was from 1561 to 1572. 'Seven groats in mill-sixpences.' (Shak., *M. W.*, I, i, 158.) Milled coins were hoarded as superior to hammered money, and were sometimes kept for use as counters. (See Davenant's *News from Plimouth*.)
- No. 5.—Jas. i, Sixpence. 1st Issue; London Mint; dated 1603; *m.m.* Thistle; 'Exurgat' legend.
- No. 6.—Jas. i, Sixpence. 2nd Issue; London Mint; dated 1607; *m.m.* Coronet; 'Quae Deus' legend.
- No. 7.—Ch. i, Sixpence. 3rd Type (The Lace Collar has succeeded the Ruff.); 1636; London Mint; *m.m.* Tun.
- No. 8.—Commonwealth, Sixpence. London Mint; dated 1652; *m.m.* Sun. (See Note on No. 13 in Tray I.)
- No. 9.—E. iii, Groat. 1st Period; 1351-60 (Titles of England, France, and Ireland); London Mint. The first Groat, or 'Great Penny'; copied from the *gros*, or 4-*denier* piece of France (the *grosso*, or 4 *danari*, of Italy). Its introduction, like that of the gold coinage, denotes an increase of trade. The type remains the same till the 2nd Silver Issue of H. vii, 1489.
- No. 10.—H. vi, Groat. 1st Period; 1st Issue; Annulet coinage; 1422-8; Calais Mint, which ends with this reign.
- No. 11.—H. vi, Groat. 1st Period; 3rd Issue; Mascle and Pine-cone coinage; 1435-40; London Mint.
- No. 12.—E. iv, Groat. 2nd Issue; Light Silver; 1464-83; London Mint; *m.m.* Crown.
- No. 13.—H. vii, Groat. 2nd Issue; 1489; London Mint; *m.m.* Cinquefoil. Note the arched crown, which had begun on Great Seals with E. iv, but had not been seen on English coins since Stephen.
- No. 14.—H. vii, Groat. 3rd Issue; 1504; London Mint; *m.m.* Cross Crosslet. Note that on the *Ob.*, besides the arched crown introduced in the previous issue, we have a profile portrait of the Kg., and that the Tressure has gone; and that on the *Rev.* the inner circle, the place of mintage, and the



pellets, have given place to a shield laid over the cross, the first appearance of Heraldry on English silver coins; on gold it had begun at once. For the first time, too, since H. iii a numeral, VII or Septim[us], is added to the Kg.'s name. This also is the first successful attempt at portraiture in the English coinage, and till now since Stephen's coins no profile bust has appeared. 'A half-faced groat.' (Shak., *John*, I, 94.)

- No. 15.—H. viii, Groat. 1st Issue; 1509-26; London Mint; *m.m.* Portcullis crowned. Fine, *i.e.*, standard, silver. Note that all lettering is still Lombardic.
- No. 16.—H. viii, Groat. 2nd Issue; 1526-43; London Mint, as 'Posui, &c.' on *Rev.*, not place of mintage; *m.m.* Lys. Fine Silver.
- No. 17.—H. viii, Groat. 2nd Issue; 1526-43; York Mint; *m.m.* Cross. 'T. W.' for Thos. Wolsey, and Cardinal's Hat, on *Rev.* The coining of groats, instead of merely the smaller silver, was one of the charges in the indictment against Wolsey. Fine silver.
- No. 18.—H. viii, Groat. 4th Issue; 1544; Bristol Mint; *m.m.* W.S. in monogram and Rose and Lys, for Sir Wm. Sharington, Master of the Bristol Mint. Base Silver,  $\frac{1}{2}$  fine and  $\frac{1}{2}$  alloy. 'Copper nose' money, so called because the end of the nose, the most prominent part in a full-faced coin, soon began to show the base metal under the silver wash. Roman lettering is now displacing Lombardic.
- No. 19.—Mary, Groat. 1553-4; London Mint; *m.m.* Pomegranate between 2 Annulets. The Pomegranate was a badge of her mother, Kath. of Aragon, first assumed by her grandfather, Ferdinand, Kg. of Aragon, in commemoration of the conquest of *Granada* from the Moors. Fine portrait.
- No. 20.—Phil. and Mary, Groat. 1554-8; London Mint; *m.m.* Lys. Philip appears in *Ob.* legend only: fine portrait of Mary.
- No. 21.—Eliz., Hammered Groat. 1558-61; London Mint; *m.m.* Cross Crosslet.
- No. 22.—Eliz., Milled Groat. 1561-6; London Mint; *m.m.* Star. The first issue of milled silver coins in England.

- No. 23.—Ch. i, Groat. 3rd Type (The Lace Collar has taken the place of the earlier Ruff.); 1637-42; Aberystwith Mint; *m.m.* Open book.
- No. 24.—Ch. ii, Groat. 3rd Issue; 1662; London Mint; *m.m.* Crown. The last *current* groat till W. iv (1836). Specimen of the last hammered money, and of the last current coins on which marks of value appear till they were revived on some pieces in 1831. This is not Maundy Money: the Hammered Maunday coins were smaller, thicker, neater, and their legends begin at the bottom on the left-hand side.

### TRAY III

- No. 1.—Eliz., Hammered Threepence. London Mint; dated 1578; *m.m.* Cross. The Rose was added to distinguish it from Elizabeth's *early* Half-groat, which had no value mark, and differed in diameter only about one-tenth of an inch.
- No. 2.—Eliz., Milled Threepence. London Mint; dated 1562; *m.m.* Star. (See Note on No. 4 in Tray II.)
- No. 3.—Ch. i, Threepence. 3rd Type (The Lace Collar has succeeded the Ruff.); 1637-42; Aberystwith Mint; *m.m.* Open book.
- No. 4.—Ch. ii, Threepence. 3rd Issue Silver; 1662; London Mint; *m.m.* Crown. The last *current* 3d. till 1845. (See Note on No. 24 in Tray II.)
- No. 5.—E. iii, Half Groat. 1st Period; 1351-60 (Titles of England, France, and Ireland); London Mint. The earliest Half Groat, the type of which does not change till the 2nd Silver Issue of Hen. vii in 1489.
- No. 6.—H. v, Half Groat. Class III, Annulets among the Pellets on the *Reverse*; Calais Mint.
- No. 7.—H. vi, Half Groat. 1st Period; 2nd Issue; Rosette and Mascle coinage; 1428-35; London Mint.
- No. 8.—E. iv, Half Groat. 2nd Issue; Light Silver; 1464-83; Canterbury Mint; C on King's breast for Canterbury, and *m.m.* Rose. Regular *mint marks* begin in this reign.

- No. 9.—H. vii, Half Groat. 2nd Issue; 1489; Canterbury Mint; *m.m.* Tun, a rebus on the name of Abp. Morton. Note the Arched Crown.
- No. 10.—H. vii, Half Groat. 3rd Issue; 1504; London Mint; *m.m.* Martlet. (See Note on No. 14 in Tray II.)
- No. 11.—H. viii, Half Groat. 1st Issue; 1509-26; Canterbury Mint; W.A. on *Reverse* for W[illelmus Wareham] A[rchiepiscopus], and *m.m.* Pomegranate, in compliment to Queen Kath. of Aragon whose badge it was (See Note on No. 19 in Tray II). Standard silver.
- No. 12.—H. viii, Half Groat. 2nd Issue; 1526-43; Canterbury Mint; "T.C." on *Reverse* for Thos. Cranmer, and *m.m.* Catherine wheel, in compliment to Queen Kath. of Aragon. Standard silver.
- No. 13.—H. viii, Half Groat. 3rd Issue, Series b; 1543; London Mint; *m.m.* Picklock. Debased silver, 5 parts fine to 1 part alloy.
- No. 14.—Eliz., Hammered Half Groat. The *later*  $\frac{1}{2}$  groat with mark of value; 1582-4; London Mint; *m.m.* Bell. The name of the place of mintage does not appear after this except on some of C. i's local issues during the Great Civil War.
- No. 15.—Eliz., Milled Half Groat. 1561-6; London Mint; *m.m.* Star. (See Note on No. 4 in Tray II.)
- No. 16.—Jas. i, Half Groat. 1st Issue; 1603-4; London Mint; *m.m.* Thistle. No legend on *Rev.*
- No. 17.—Jas. i, Half Groat. 2nd Issue; 1604-25; London Mint; *m.m.* Lys. 'Rose and Thistle Half Groat.' No value mark needed for so distinct a type. *Ob.* legend 'Rosa, &c.' *Rev.* legend 'Tueatur unita Deus.'
- No. 18.—Ch. i, Half Groat. 2nd Type (Falling Ruff.); 1630; London Mint; *m.m.* Prince of Wales' Badge, denoting silver from the Welsh lead mines.
- No. 19.—Commonwealth, Half Groat. London Mint. No legends, no date, no *m.m.* Only value mark. (See Note on No. 13 in Tray I.)



No. 20.—Ch. ii, Half Groat. 3rd Issue; 1662; London Mint; *m.m.* Crown. The last *current* Silver Half Groat. (See Note on No. 24 in Tray II.)

#### TRAY IV

No. 1.—William I or II, Penny. 'Paxs' Type; 'LIFPOLD ON PINE' [Winchester]. Probably one of the Beaworth 'find,' Hants., 30 June, 1833, of nearly 12,000 pennies of W. i or W. ii, all but 100 of which were of this type, and a Paxs penny with this moneyer and mint so spelt was among them. Struck in a collar, like all coins of W. i and W. ii, as is clear from their being perfectly round and all of a size.

No. 2.—H. ii, Penny. Type I; 1156. Rude work. *Reverse* legend illegible, as often in this type.

No. 3.—H. ii, Penny. Type 2; 1180. The first 'Short Cross' penny. 'RAVL ON LVNDE' [London].

No. 4.—H. iii, Penny. 'Long Cross' penny, Type A, with sceptre. 'NICOLE ON CANT'[erbury]. Note that by its 'III' at the end of the *Obverse* legend this coin shows that it was struck by the third Henry. This was the first English coin to give such an indication, and it does not occur again till the 3rd Issue of H. vii. Some pennies have TERCI[VS].

No. 5.—H. iii, Penny. 'Long Cross' Penny, Type B, without sceptre. 'WILLEM ON CANT'[erbury]. 'III' for *tertius* on *Obverse*. *m.m.* Mullet. Moneyers' names disappear after this coinage.

No. 6.—E. i, Penny. 1279 coinage. 'CIVITAS CANTOR' [Canterbury]. This type of penny, as regards both *Ob.* and *Rev.*, continues unchanged till the 2nd Issue of H. vii.

No. 7.—E. ii, Penny. 'EDWAR.' Bury St. Edmunds Mint, 'VILL[A]S[AN]C[T]I EDMVNDI.'

- No. 8.—E. iii, Penny. After 1351 when the weight was reduced to 18 grains; Durham Mint, 'CIVITAS DVREME': and note that one limb of the cross is curved into the form of a crosier.
- No. 9.—R. ii, Penny. York Mint, 'CIVITAS EBORACI'; and note the quatrefoil in the centre of the cross, the distinctive mark of the Archbishop's Mint at York from E. i to R. iii inclusive.
- No. 10.—H. v, Penny. Class III, Annulets among the Pellets on the *Rev.*; Calais Mint; *m.m.* Pierced Cross.
- No. 11.—H. vi, Penny. 1st Period; 2nd Issue; Rosette and Mascle Coinage; 1428-35; York Mint. Note the quatrefoil (see Note on No. 9 above).
- No. 12.—E. iv, Penny. 2nd Issue; Light Silver; 1464-83; Durham Mint; *m.m.* Cinquefoil. Regular *mint marks* begin in this reign. Rose in middle of Cross on *Rev.*
- No. 13.—H. vii, Penny. 3rd Issue; 1504; 'Sovereign Type'; York Mint. Note the two keys under the shield on the *Rev.*, taken from the arms of the See.
- No. 14.—H. viii, Penny. 1st Issue; 1509-26; 'Sovereign Type'; Durham Mint; 'T.D.' above the shield on the *Rev.* for T[homas Ruthall, Episcopus] D[unelmensis]. Standard silver.
- No. 15.—H. viii, Penny. 2nd Issue; 1526-43; 'Sovereign Type'; Durham Mint; 'T.W.' for Thos. Wolsey, and Cardinal's Hat, on *Rev.* Standard silver. Distinguished from 1st Issue silver by having as *Ob.* legend 'Rosa sine spina.'
- No. 16.—H. viii, Penny. 3rd Issue; 1543; Series b; London Mint; ? *m.m.* Debased silver, 5 parts fine to 1 part alloy, and weight reduced to 10 grains only.
- No. 17.—E. vi, Penny. 3rd Issue; 1551-3; Series b; 'Rose Penny'; York (Royal) Mint, the ecclesiastical mints having been abolished by H. viii; *m.m.* Pierced Mullet. Debased silver,  $\frac{1}{3}$  fine to  $\frac{2}{3}$  alloy.
- No. 18.—Phil. and Mary, Penny. 1554-8; 'Rose Penny'; London Mint; *m.m.* Rose. Base silver,  $\frac{1}{3}$  fine to  $\frac{2}{3}$  alloy.

- No. 19.—Eliz., Hammered Penny. 1558-61; London Mint; *m.m.* Cross Crosslet. (No Milled Penny is known.)
- No. 20.—Jas. i, Penny. 1st Issue; 1603-4; London Mint; *m.m.* Thistle. No legend on *Rev.*
- No. 21.—Jas. i, Penny. 2nd Issue; 1604-25; 'Rose and Thistle Penny'; London Mint; *m.m.* 2 Pellets. *Ob.* legend, 'Rosa, &c.' *Rev.* legend, 'Tueatur unita Deus.'
- No. 22.—Ch. i, Penny. 3rd Type (the Lace Collar has displaced the Ruff.); 1631-42; London Mint; *m.m.* 2 Pellets.
- No. 23.—Commonwealth, Penny. London Mint; no legends, no date, no *m.m.* Only value mark. (See Note on No. 13 in Tray I.)
- No. 24.—Ch. ii, Penny. 3rd Issue; 1662; London Mint; *m.m.* Crown. The last *current* Silver Penny. (See Note on No. 24 in Tray II.)

#### TRAY V

- No. 1.—Stephen, Cut Halfpenny. The coins of this reign are very rude. The cutting of pennies into halves and quarters along the line of the cross, to serve as small change was done not only by the people, but by the Mint. This is certain, because some of the pennies in the Beaworth 'find' (See Note on No. 1 in Tray IV), which was composed of fresh coins that had never been in circulation, were so cut, evidently as a direction to the public how to do it. The practice was as old as Æthelred II's day, and continued as late as the 15th century, although round halfpence and farthings had been issued from E. i's time onwards; but, as we know, in insufficient quantities. (*Cp.* the quartering of Spanish Dollars for use in the W. Indies, *temp.* W. iv and Victoria, which was discontinued when it was found that dishonest persons cut the dollar into five 'quarters.') 'She tore the letter into a thousand halfpence.' (Shak., *M. Ado*, II, iii, 147. The cut  $\frac{1}{2}$ d. must have been still a familiar object in Shakespere's time.)



- No. 2.—H. iii, Cut Halfpenny. Type 2, Class D, of H. ii; 1216-22. 'Short Cross' penny. 'WILLEM . . . . .' (See Note on No. 1 above.)
- No. 3.—E. i, Halfpenny. 'EDWARDVS REX ANG.' London Mint. A star of six points at end of legends. Except a small issue by John, this is the first Round Halfpenny since the Conquest. 'Eduard did smyte rounde peny, halfpeny, ferthyng.' (Langtoft's *Chronicle*; s.a. 1280.)
- No. 4.—E. ii, Halfpenny. 'EDW R' ANGL' DNS HYB.' The 'R' perhaps does double duty as part of the King's name and as the initial letter of 'Rex.' London Mint.
- No. 5.—E. iii, Halfpenny. 'EDWARDVS REX AN.' All but the English title is crowded out of this small coin. London Mint.
- No. 6.—R. ii, Halfpenny. 'RICARD REX ANGL.' London Mint.
- No. 7.—H. v, Halfpenny. Annulets among the Pellets on the *Reverse* (*Cp.* No. 10 in Tray IV); Calais Mint; *m.m.* Pierced Cross.
- No. 8.—H. vi, Halfpenny. 1st Period; 1st Issue; Annulet coinage; 1422-8; London Mint.
- No. 9.—H. viii, Halfpenny. 1st Issue; 1509-26; London Mint; *m.m.* Portcullis.
- No. 10.—H. viii, Halfpenny. 3rd Issue; 1543; Series b; Canterbury Mint; ? *m.m.*; Debased silver, 5 parts fine to 1 part alloy.
- No. 11.—Eliz., Hammered Halfpenny. 1595-8; London Mint; *m.m.* Key; no legends. (No Milled Halfpenny is known.)
- No. 12.—Jas. i, Halfpenny. 1st Issue; 1603-4; London Mint; *m.m.* Thistle; no legends. Note that this is the last coin that bears the old Gothic *Reverse* type of the Cross and Pellets, dating from H. iii. This  $\frac{1}{2}$ d. is distinguishable from Eliz.'s only by *mint marks*.
- No. 13.—Jas. i, Halfpenny. 2nd Issue; 1604-25; 'Rose and Thistle Halfpenny'; London Mint; *m.m.* Rose; no legends.
- No. 14.—Ch. i, Halfpenny. 1625-42; London Mint; 'Rose Halfpenny'; no legends.

- No. 15.—Commonwealth, Halfpenny. London Mint; no legends; no date; no *m.m.*; no value mark. The last Silver Halfpenny.
- No. 16.—E. i, Farthing. 'EDWARDVS REX.' London Mint. Some have no inner circle: this has. The first round farthing. As some have as *Rev.* legend 'LONDRIENSIS,' instead of 'CIVITAS LONDON,' these pieces were commonly known as 'Londrenses.' (See note on No. 3 above.)
- No. 17.—Eliz., Three Halfpence. Hammered (no milled example known); 1575 (always dated); London Mint; *m.m.* Cinquefoil; Rose on *Ob.* to distinguish it from the Penny which it exceeds in diameter by only  $\frac{1}{16}$  of an inch. Issued only in this reign, from 1561 to 1582 inclusive.
- No. 18.—Eliz., Three Farthings. Hammered; 1572 (always dated); London Mint; *m.m.* Ermine Spot; Rose on *Ob.* to distinguish it from the Penny: it could not be confused with the  $\frac{1}{2}$ d., which bore a different design. Issued only in this reign, from 1561 to 1582 inclusive. The place of mintage is recorded for the last time on certain of the small silver coins of Eliz., viz., Hammered Half Groat of 2nd Type (No. 14 in Tray III.), Three Halfpence, Penny, Three Farthings (Hammered or Milled). Under Eliz. the number of denominations reached its highest—20. 'In my ear I durst not stick a rose, lest men should say, "Look where three farthings goes"' (Shak., *John*, I, 143). 'Whipped and then [his ears] cropped for washing out the roses In three farthings to make them pence' (Beaumont and Fletcher, *Scornful Lady*, III, 2).
- No. 19.—Jas. i. Coin-weight for the Sovereign of the 1st Gold Issue (1603) after its enhancement in 1604 to 22s. current value owing to the gold coins of the 2nd Issue (1604) being of the reduced weight of  $154\frac{3}{4}$  grains to the Sovereign; those of the 1st Issue had been at the rate of  $171\frac{3}{4}$  grains to the Sovereign. For the ready recognition of the coin to which it applies its *Obverse* type is that of the *Ob.* of the Sovereigns of these two issues. The admirable portraits

on coin-weights of James i and Charles i should be noticed. Afterwards the busts on these weights became, as a rule, much ruder: Kirk's excellent head of George ii on the Guinea and Half Guinea weights is, however, an exception, as is that of John v on the weights for checking the Gold 'Portugal-pieces' current here in the 18th century, which also was probably by Kirk.

- No. 20.—Jas. i. Coin-weight for the Half Sovereign of the 1st Gold Issue (1603) after it was called up to 11s., as explained under No. 19 above. Weight  $85\frac{2}{3}\frac{5}{7}$  gr. For its ready recognition its *Obverse* is similar to that of the Half Sovereigns of the 1st and 2nd Issues.
- No. 21.—Jas. i. Coin-weight for the Angel of the 3rd Gold Issue (1605). Weight  $71\frac{1}{8}$  gr. For the reason given above it follows the *Obverse* design of the Angel.
- No. 22.—Jas. i. Coin-weight for the Thistle Crown of the 2nd Gold Issue (1604), the *Obverse* type of which it resembles, less the crown. Weight  $30\frac{3}{4}\frac{1}{1}$  gr.
- No. 23.—Ch. i. Coin-weight for the Unite, or Twenty-shilling Piece. Weight  $140\frac{2}{3}\frac{1}{1}$  gr. It follows the 3rd, or lace-collar, type of the Tower Mint Gold (1625-42), and the B on the *Reverse* shows it to be by the celebrated artist Briot, Chief Engraver to the Mint.
- No. 24.—Ch. i. Coin-weight for the Gold Crown, or Five-shilling Piece. It is of the same type as No. 23 above, and is also by Briot, whose signature is below the bust as well as on the *Reverse*. Weight  $35\frac{5}{8}\frac{1}{1}$  grains.

#### TRAY VI

- No. 1.—W. iii and Mary ii, Halfpenny; 1694. This copper issue of a Halfpenny and a Farthing superseded the worthless 'Plug-money' of the same denominations of this and the two preceding reigns. The 'Plug-money' was of tin, with a square plug of copper inserted in the middle to make counterfeiting more difficult; it had been issued by government owing to scarcity of copper. Specimens of



Plug-money in good condition are very scarce. The copper halfpence of this issue are either struck or cast: this example is cast.

- No. 2.—W. iii, Halfpenny; 1699. 2nd Variety; Britannia rests her olive-branch on her knee, instead of holding it up. This coin is sometimes struck, but usually cast, as our specimen is.
- No. 3.—G. i, Halfpenny; 1724. Much lighter than W. iii's Halfpenny. Designed by John Croker (or Crocker) of Dresden, Chief Engraver to the Mint. Note the broad graining outside the circle, a new feature, which is seen first on pattern farthings of Anne.
- No. 4.—G. i, 'Dump' Halfpenny; 1718. So called from being smaller and thicker than the rest, the bust too is not so large as that on the ordinary halfpence with broader and thinner flans, as No. 3 above. 'Dumps' are of the years 1717 and 1718.
- No. 5.—G. i, Wood's Irish Halfpenny; Variety No. 1, Harp in front of Hibernia, 1722. No. 3 Pattern in Dr. Nelson's *Copper Coinage of Ireland*.
- No. 6.—G. i, Wood's Irish Halfpenny; Variety No. 2, Harp behind Hibernia, 1723. No. 8 Pattern in Dr. Nelson's *Copper Coinage of Ireland*. Owing to a deficiency of copper money in Ireland, where none had been issued since 1696, a patent was granted by the Crown in 1722 to Wm. Wood, a mine owner, to coin halfpence and farthings for use there. Discontent in Ireland, due chiefly to the profits of the transaction going to an Englishman, was fanned by Swift in his *Drapier's Letters*. His wild statements that Wood's coins were one-fifth, one-sixth, or even one-twelfth below the stipulated weight, and of inferior metal, were proved false by an assay by Sir Isaac Newton, Master of the Mint, which showed that on the whole they rather exceeded the terms of the patent in both weight and quality, the only fault being that the pieces were of unequal weight. Wood, however, had to surrender his patent, and received a pension in its place. Artistically and

in point of workmanship 'Wood's Halfpence' were far superior to the English copper coinage of the time, and were also the best copper money so far made for Ireland. They were coined at Bristol.

- No. 7.—G. ii, Halfpenny; 1729. 1st Issue, 'Young Head' Coinage, 1729-39. No inner circle on *Ob.* or *Rev.* Note the very spirited figure of Britannia. Designed by John Croker (or Crocker) of Dresden, Chief Engraver to the Mint. Heavier than G. i's Halfpence, but somewhat lighter than W. iii's.
- No. 8.—G. ii, Halfpenny; 1746. 2nd Issue, 'Old Head' Coinage, 1740-54. The figure of Britannia is slighter. Designed by John Sigismund Tanner of Saxe-Gotha, Chief Engraver to the Mint.
- No. 9.—G. iii, Halfpenny; 1770. 1st Issue, 1770-5. Young Head. Designed probably by Tanner, as No. 8. Weight raised; heavier than W. iii's  $\frac{1}{2}$ d.
- No. 10.—G. iii, Halfpenny; 1799. 3rd Copper, but 2nd Halfpenny, Issue: this year only. Older Head. The concavity of the flan was intended partly to protect the design from rubbing (*cp.* the 'Cartwheel' copper of 1797, Nos. 3 and 10 in Tray VII), partly to increase the difficulty of counterfeiting; the indented edge, with milling in the indent, also made imitation by the ordinary method of casting in sand-moulds impossible. Owing to the high price of copper at the time Boulton was allowed to make these pieces rather lighter than the rate of the 1797 issue, therefore this  $\frac{1}{2}$ d. of 1799 weighs less than half the 1797 penny. Designed by C. H. Küchler, a Fleming. (See Note on No. 10 in Tray VII.)
- No. 11.—G. iii, Halfpenny; 1806. 4th Copper, but 3rd Halfpenny, Issue, 1806 and 1807. On the concave flan and the edge, see No. 10 above. Made by Boulton (see Note on No. 10 in Tray VII.) Designed by Küchler. Lighter than the 1799 halfpenny. This was the only complete copper issue in the reign of the three pieces—1d.,  $\frac{1}{2}$ d., and  $\frac{1}{4}$ d.: it was also a large issue, the object being to drive the 18th

century Token coinage out of currency, which it succeeded in doing.

No. 12.—Imitation of the Regal coinage; ‘Birmingham Half-penny’: Atkins, 392/355. *Ob.* legend, ‘Gregory · III · Pon.’ *Rev.* legend, ‘Belona. 1777.’ From 1754 to 1770 no copper coin was minted, hence there sprang up a vast number of light forgeries, bearing a general resemblance in type to the Regal coinage, but with variations in the legends, often grotesque, to enable the issuers to plead that they were not copies and so escape the penalties of the law. Their circulation was facilitated by the fact that a considerable proportion of the poorer classes, among whom these pieces largely passed, were unable to read. They were struck, too, from dies purposely so treated as to turn out coins which looked worn, that the public might be encouraged to accept what seemed to have been accepted before. Farthings of a similar character were also floated. These ‘Birmingham Halfpence,’ as they were called from the principal place of their manufacture, even counterfeited the Token money, and are said at one time to have composed three-fourths of the copper currency. The genuine coins and heavier tokens were often melted down for their manufacture. In 1789 Pinkerton (*Essay on Medals*, II, 85) estimated that not a fiftieth part of the copper money in use was legitimate.

No. 13.—Imitation of the Regal coinage; ‘Birmingham Half-penny’: Atkins, 390/225. *Ob.* legend, ‘Georgius · III · Rex.’ *Rev.* legend, ‘Britannia · 1775.’ A frank counterfeit with no evasion in the legends.

No. 14.—

No. 15.—Jas. i, ‘Harrington Farthing.’ Authorised Token; *m.m.* Lys. (No. 4 on p. 7 of Montagu’s *Copper Coins of England*.) The two sceptres passing through one crown represent the union of England and Scotland. These pieces apparently were struck on sheet copper, and then punched out. They were issued ostensibly for the convenience of the poorer classes, and with a



view to driving out the private tradesmen's tokens which served the same purpose of small change. The patent for making them was granted originally to Lord Harrington, in 1613. They were to weigh 6 grains, and as a full farthing's worth of copper would have weighed over 80 grains, the profit to the patentee was enormous. Their unpopularity was so great that the Government did not venture to make them a compulsory tender, and had great difficulty in getting them circulated. Tokenhouse yard, in London, from which they were issued, preserves their name. 'Thence to Harrington, be it spoken, For name-sake I gave a token To a beggar that did crave it.' (Brathwait: *Drunken Barnaby's Four Journeys*. Pt. iii. see also Jonson, *Devil is an Ass*, II, i; *Bart. Fair*, III, i and iv; *Magn. Lady*, II, 6; Wotton's *Letters*, p. 558.)

No. 16.—Ch. i, 'Harrington Farthing.' 1st Type (similar to that of Jas. i), 1625-35; *m.m.* Ω. (No. 1 on p. 12 of Montagu.)

No. 17.—Ch. i, 'Harrington Farthing.' 2nd Type, 'Rose, or Royal, Farthing,' no Harp; 1635-42; *m.m.* Crescent. (Montagu, p. 18.) Lord Harrington had died soon after the grant of the patent, and other patentees succeeded him; but for convenience these pieces are generally called by his name.

No. 18.—Ch. ii, Farthing; 1673. This and its companion Half-penny were the first Regal copper coins, and began to be issued in 1672. Being of honest weight they killed the 17th century private token coinage, 1648-79 (See Nos. 19, 20, 21, in Tray I), which had succeeded the 'Harringtons.' The *Rev.* displays the first numismatic representation of Britannia on an English coin. It was probably copied from the Britannia on a *Rev.* of Hadrian in First Brass, and the beautiful Frances Stewart, afterwards Duchess of Richmond, is supposed to have been taken as a model for the figure. Her portrait appears on medals of this reign. (See *Medallic Illustrations of British History*, I, pp. 537, 542, 585-8: *Brit. Mus.*, 1885; and Pepys, *Diary*, Feb. 25, 1666-7.) On the shield is the earliest Union Jack, the cross of St. George and the

saltire of St. Andrew; the saltire of St. Patrick was not added till 1801, after the abolition of the Irish Parliament.

- No. 19.—W. iii and Mary ii, Farthing; 1694. The copper pieces of this issue were either struck or cast: this example is cast. Notice the admirable portraits. (See Note on No. 1 above.)
- No. 20.—W. iii, Farthing; 1697. This is the only type, and is as the 1st variety of its Halfpenny; Britannia holds her olive branch up, contrast No. 2 above. The copper pieces of this issue were sometimes struck, but usually cast, as this specimen is.
- No. 21.—G. i, Farthing; 1721. Many of these farthings appear, like this specimen, to have been cast. (See Note on No. 3 above.)
- No. 22.—G. i, Wood's Irish Farthing; Variety No. 2, Harp behind Hibernia, 1723. No. 7 Pattern in Dr. Nelson's *Copper Coinage of Ireland*. (See Note on No. 6 above.)
- No. 23.—G. ii, Farthing; 1739. 1st Issue, 'Young Head' coinage, 1729-39. (See Note on No. 7 above.)
- No. 24.—G. ii, Farthing; 1746. 2nd Issue, 'Old Head' coinage, 1740-54. Designed by John Sigismund Tanner, of Saxe-Gotha, Chief Engraver to the Mint.
- No. 25.—G. iii, Farthing, 1773. 1st Issue, 1770-5. Young Head. (See Note on No. 9 above.)
- No. 26.—G. iii, Farthing; 1799. 3rd Copper, but 2nd Farthing Issue: this year only. Older Head. Value indicated on *Rev*. (See Note on No. 10 above.)
- No. 27.—G. iii, Farthing; 1807. 4th Copper, but 3rd Farthing Issue, 1806 and 1807. Value not indicated. (See Note on No. 11 above.)
- No. 28.—Imitation of the Regal Coinage; 'Birmingham Farthing.' Atkins, 395/478. *Ob*. legend, 'GEVRCV ATOETE.' *Rev*. legend, 'ETAENA NOA.' (See Note on No. 12 above.)

## TRAY VII

No. 1.—Penny Token, 18 Century Series. Bath, 1794. (Atkins, *Tokens of the 18th cent.*, 169/6.) The edge-inscription is 'On demand we promise to pay one penny.' This coin is struck from the same dies as its companion halfpenny (Atkins, 173/40), but on a flan twice as thick; it may therefore be termed a 'Dump' penny (*cp.* No. 4 in Tray VI). The camel symbolized the grocery products of the East.

During the second half of the 18th century the government issues of copper money were quite insufficient to meet the demand for small change. One result of this was the appearance of the counterfeit pieces known to collectors as 'Imitations of the Regal coinage' (see Nos. 12, 13, 28, in Tray VI). The other result was the revival of a Token Coinage in 1787, which continued till killed by the large Regal copper issue of 1806, though it had been scotched by the smaller Regal issues of 1797 and 1799. A large proportion of the 18th century Tokens were admirable in every respect: in design, execution, fineness of metal, and weight; others, owing to a desire on the part of their issuers to make the largest possible profit, were deficient in some or all of these qualities. The honest tokens, too, suffered discredit by being counterfeited on light flans; and the more reputable the token, the more it was forged. This 18th century Token series was issued in such vast numbers that it almost superseded the regular copper currency. It may be mentioned here that, in the dearth of small coin, many copper and brass medalets of penny or halfpenny size passed into currency as money.

No. 2.—Penny Token, 18th Century Series. Anglesea, 1787. (Atkins, 267/49.) The edge-inscription continues the *Reverse* legend, and the whole is (*Rev.*) 'We promise to pay the bearer one penny (*Edge*) on demand in London, Liverpool, or Angeseey.' 'P.M.C.' on the *Rev.* is for Parys Miners Co. Parys Mountain, where the copper mines were, is said to have been named after one Robt. Parys, *temp.* H. iv. (See Note on No. 1 above.)



No. 3.—G. iii, Penny, 1797. The 'Cartwheel' coinage, so called from the broad flat raised rim, a device adopted for the protection of the design from wear: *cp.* the concave issue of 1799 see No. 10 in Tray VI). This is the first Regal Copper Penny. The incuse lettering is found on the *face* of no other Regal coin, but it occurs in conjunction with the 'Cartwheel' rim on certain 18th century Tokens and E. Indian money. Note that on the *Rev.* the trident has taken the place of the spear, and that the sea is expressed: Britannia now rules the waves. 'K' on the truncation of the bust is for C. H. Küchler, a Fleming, the designer (see Nos. 10, 11, in Tray VI). 'Soho' on the rock below the shield indicates that this coinage was made by Boulton at the Soho Works, Birmingham, the contract being given to him as he could get copper cheaper than the Government could. The weight of this penny is 1 oz. *av.*, and was carefully adjusted, as was the weight of its companion twopenny piece, which was 2 oz., in order that the two coins might also be used as weights. These are the only instances in this country of the combination of coins and weights. It was legal tender up to a shilling's worth.

No. 4.—Farthing Token, 19th Century Series. Whitehaven, 1812. (Davis, *Nineteenth Century Token Coinage*, 37/1.) 'W.B.' on the *Ob.* are the initials of the issuer, Wm. Bragg, a grocer. The edge is milled. The artist was Wm. Halliday of Birmingham.

After 1797 there was a steady rise in the value of copper, owing to the demands made upon it for the purposes of the war. As a first consequence the regal issues of copper money became less and less heavy till they stopped altogether: the copper issue of 1799 was lighter than that of 1797, that of 1806 lighter than that of 1799, and after 1807 no copper was coined till 1821. As a second consequence the heavier coins, both regal money and tokens, went to the melting pot, their intrinsic value being greater than their face value, and were re-issued by counterfeiters on lighter flans; 'the lean coins soon

devoured the fat ones' (Ruding, II, 97). As a third consequence a dearth of small change again resulted, and thus arose the 19th Century Token Coinage, which, as silver at the same time also became scarce, and the small issues of shillings and sixpences in 1787 were the only Regal silver money struck in Geo. iii's reign between 1763 and 1816, included a silver series. This irregular supply of change was conducted by Overseers of the Poor, Banks, and Tradesmen. The copper series began in 1804, and was forbidden by the Act of Suppression of 1817 (though some pieces were allowed currency till 1823), and in 1821 a Government issue of copper took its place. The private silver tokens, which were all more or less below weight, died a natural death at the hands of the superior royal silver issue of 1816. The authorized Bank of England silver tokens, however, were allowed to be current till 1818, when, for the same reason, they ceased to be necessary. The 19th century Token coinage is artistically inferior to its precursor of the 18th century, and displays less variety of design; but it is neat of execution, and the weight of the copper coins was often honest, although there were great discrepancies in this respect.

No. 5.—G. iii, Penny; 1806. 4th copper, but 2nd Penny, issue. The edge is indented, with milling in the indent. (See Note on No. 11 in Tray VI.)

No. 6.—Penny Token, 19th Century Series. - Birmingham, 1812. (Davis, 148/37.) Issued by the Overseers of the Poor. The building on the *Ob.* is the Workhouse (1733-1853); 'W.' on the pavement indicates the artist, Willets. The arms on the *Rev.* are those of the de Birmingham family, once lords of the manor. The edge is indented, and milled in the indent. This is heavier than the regal penny of 1806. The order of weight of the six pennies in this Tray is (1) No. 3, Regal, 1797; (2) No. 2, Anglesea Druid Token, 1787; (3) No. 6, Birmingham Workhouse Token, 1812; (4) No. 1, Bath Token, 1794; (5) No. 5, Regal, 1806; (6) No. 7, Cheltenham Token, 1812. This Birmingham Penny was one of the few tokens permitted to run after

the Act of Suppression; it was granted three years' extension of currency, till 1820. (See Note on No. 4 above.)

- No. 7.—Penny Token, 19th Century Series. Cheltenham, 1812. (Davis, 55/15). John Bishop & Co., the issuers, were tailors, opposite the Plough Inn. The edge is indented, and milled in the indent. This piece is by Halliday. (See Note on No. 4 above.)
- No. 8.—Halfpenny Token, 18th Century Series. Liverpool, 1791. (Atkins, 59/36.) The edge-inscription is 'Payable at the warehouse of Thomas Clarke.' (See Note on No. 1 above.)
- No. 9.—As No. 8 above, but from a different die.
- No. 10.—G. iii, Twopenny piece, 1797. 'Cartwheel' coinage. The only Regal twopenny piece in copper. A magnificent coin, but its weight being intolerable, the issue of this year was not repeated. It was legal tender up to a shilling's worth. (See Note on No. 3 above.)
- No. 11.—Twopenny Token, 19th Century Series. Norwich, not dated. (Davis, 83/17.) Robert Blake's works were in Higham Street. The artist was Halliday. This coin has an indented edge, with milling in the indent (see Note on No. 10 in Tray VI); it is much lighter than the Regal twopenny piece of 1797. (See Note on No. 4 above.)
- No. 12.—Shilling Token, 19th Century Series. Liverpool, 1812. (Davis, 64/2.) The edge is milled, which was not always the case with silver tokens. The artist was Halliday.
- No. 13.—Halfpenny Token, 19th Century Series. Sheffield, 1812. (Davis, 185/150.) This was payable at 18, Norfolk Row, Sheffield. 'Halfpenny' on the *Rev.* is mis-spelt. The edge is milled. The artist was Thos. Wyon, Chief Engraver of His Majesty's Seals: his signature 'W' is on the medal suspended from Nelson's neck on the *Ob.* (See Note on No. 4 above.)
- No. 14.—Farthing Token, 18th Century Series. South Wales, 1793. (Atkins, 262/23a.) The head is that of St. David. (See Note on No. 1 above.)



No. 15.—Jas. ii, Gun-money, Sixpence, July, 1689. The bust on the *Ob.* is draped. The type of the *Rev.* is similar to that of the Harrington Farthings. The sceptres pass through the crown. VI denotes the value. The edge is milled.

This Gun-money was 'Money of Necessity' struck by James ii for the conduct of his operations in Ireland in 1689 and 1690, and was so called because it was made out of old brass cannon, besides broken bells, and any kitchen or other utensils, or refuse, of brass or copper. It was practically a Regal Token issue of nominal current value, intended to serve the temporary emergency and to be redeemed at face value when the need for it was past. In Ireland it was generally known as 'brass money.' From Croker's *Narratives Illustrative of the Contests in Ireland in 1690* (Camden Society), it would appear that in resorting to this expedient James acted on Scottish advice, which was that he should spend the money advanced to him by Louis xiv on his adherents in Scotland rather than on his Irish supporters. A peculiar feature of this coinage is that all the pieces except the crowns bear not only the year, but the month, of issue; probably to establish an order of redemption. When the supply of metal began to fail, the Shillings and the Half-crowns were diminished in size. After the battle of the Boyne they were called down by William iii to their intrinsic values: the Crown and Large Half-crown to a penny, the Small Half-crown to Three-farthings, the Large Shilling to a Halfpenny, the Small Shilling and the Sixpence to a farthing. Artistically they are excellent coins, as might be expected from their having been designed by the celebrated John Roettier of Antwerp, sometime Chief Engraver to the Mint.

No. 16.—Jas. ii, Gun-money, Large Shilling, August, 1689. The head and neck only of the King is shown, no bust or drapery. The sceptres pass through the crown. XII denotes the value. The edge is plain.

No. 17.—Jas. ii, Gun-money, Small Shilling, June, 1690. The King's head is smaller in proportion than that on the Large

Shilling, otherwise the treatment of it is the same. The sceptres are behind the crown; in some pieces they pass through it. XII denotes the value. The edge is milled.

No. 18.—Jas. ii, Gun-money, Large Half-crown, October, 1689. The King's bust is shown, draped, as on the Sixpence. The sceptres pass through the crown, in some pieces they are behind it. XXX denotes the value. The edge has a triple row of leaves.

No. 19.—Jas. ii, Gun-money, Small Half-Crown, May, 1690. The head and neck only of the King is shown, no bust or drapery. The sceptres are behind the crown. XXX denotes the value. The edge is milled.

No. 20.—Jas. ii, Gun-money, Crown, 1690. The month is not indicated on crowns. No mark of value is given, perhaps because the *Rev.* resembles generally the type of James ii's English Silver Crowns, while the equestrian *Ob.* was associated with the large silver of Charles i. The edge has a leaf pattern.



FIG. 1. PRE-HISTORIC VASE IN SPALATO MUSEUM.



FIG. 2. CLAY URN

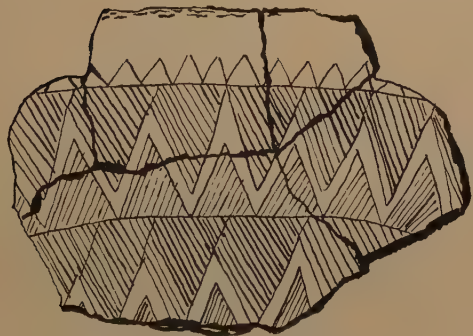


FIG. 3. FRAGMENT OF CLAY URN.



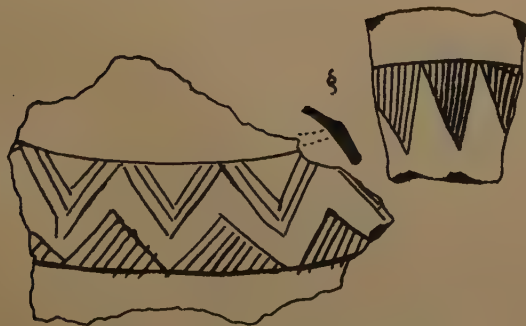
FIG. 4. TWO-HANDLED CLAY URN.



FIG. 6. ONE-HANDLED URN-SHAPED VESSEL: BROWN.



FIG. 5. ONE-HANDLED CLAY VESSEL.



FIGS. 7-8. GREY-BROWN FRAGMENTS WITH TRIANGLE DESIGN.



FIG. 9. DARK BROWN FRAGMENT WITH TRIANGLE DESIGN.

FIG. 10. GREY-BROWN FRAGMENT WITH TRIANGLE DESIGN.





## A PRE-HISTORIC VASE IN THE MUSEUM OF SPALATO

By A. M. WOODWARD, B.A.

WITH PLATE I

During a recent visit to Spalato, in Dalmatia, I noticed a primitive vase in the local museum, and Monsignor Bulić, the Curator, did me the honour of requesting me to publish it. I wish to record my gratitude to him for his courtesy in giving me every facility for studying and photographing the vase in question.\* As the photograph shows (Pl. I, fig. 1), it is a hand-made vase of dark-grey clay full of micaceous particles, decorated with two bands of incised hatched-triangles, which are enclosed above and below with a horizontal line: the incisions are white-filled; the surface, which is carefully finished all over, is hand-burnished to a rich lustrous black. It was found, Monsignor Bulić told me, in 1906 at the small village of Gardun, which is a short distance to the south of the little town of Sinj, some eighteen miles inland from Spalato, close to the foot of the main ridge of the Dinaric Alps. No other objects were found with the vase, which was discovered by a peasant on his land. The find-spot is not without interest, for I believe that no other remains of the neolithic period, to which this vase seems undoubtedly to belong, have been found in this district.

The resemblance in the clay, the shape, and the decoration of the vase, to those of vases found in the early settlements in Bosnia leaves no doubt that it is of kindred fabric; the productive sites of Ripač† and Jezerine‡ in North-west Bosnia give us numerous vases and sherds which will serve to illustrate it. The description of the material of the vases at the latter site applies exactly here: 'the clay is dark,' says Dr. Radimský, § ' . . . and mixed with small particles of limestone and mica, and it is only in the finer vases that the

---

\* Catalogue F6, No. 642. Height 8.3 cm.

† RADIMSKÝ. *Der prähistorische Pfahlbau von Ripač bei Bihać. Wissenschaftliche Mitteilungen aus Bosnien und der Hercegovina*, V (1897).

‡ RADIMSKÝ. *Die Nekropole von Jezerine in Pritoka. Ibid.*, III (1895).

§ *Op. cit.*, V (1897), p. 50.

surface is polished.' And an examination of the Ripač finds in general leaves the impression that our vase is more akin to them in style than to those at Jezerine. The clay is, as a rule, the same in the pottery from these two sites, but at the latter, which was a necropolis, evidently in use for several centuries, the majority of the finer pottery seems to be wheel-made, which is not the case at Ripač. This is not pointed out by the author of the papers quoted above, but the illustrations of his finds at Jezerine seem to show it to be the case. He says, moreover, that there are many analogies between the later objects at Ripač and the older objects in the graves of Jezerine, but that the latter represent an advance in civilisation; ¶ and it is important to notice that amber ornaments are found in large numbers in the graves of comparatively early date at the latter place, though none at all were found at Ripač.

The style of our vase can be roughly paralleled in both the sites mentioned, but we must not confuse it with wheel-made vases of similar shape from Jezerine. Yet in hand-made pottery from the two sites we get a fairly close parallel in shape. Large numbers of hand-made vases, which were used to contain the ashes of the dead in the cemetery at Jezerine, have the rounded belly and cylindrical neck of the Gardun vase, but they are all considerably larger, and range from about 13 to 32 cm. in height; but we must distinguish these as a class from our vase, for (1) many of them contained bronze objects, and (2) cinerary urns must not be used as parallels for a small vase designed for domestic purposes, as I imagine ours to have been.

But there are a few smaller vases from that site which shed light on ours. We have one good instance of a wide-mouthed vase with rounded bottom (fig. 4), which seems to be hand-made; it differs from ours in the fact that the neck is not so carefully distinguished from the belly of the vase, so that it gradually diminishes in girth from the point where the diameter is greatest to a point very little below the lip. It also has two handles instead of one, and, moreover, is nearly double the size of our specimen. But the similarity of motive in the decoration helps to make it instructive as a parallel, though it only has one row of hatched triangles and

---

¶ *Op. cit.*, V (1897), p. 75.



no line enclosing them above. A closer parallel, as far as shape is concerned, is to be found in a vase from Ripač (fig. 6); the proportion of height to diameter and the way in which the handle is put on are very closely akin to ours, but the neck is not so distinctly cylindrical (though perhaps slightly more so than in the vase previously mentioned), and it has a slight ring foot; further, the decoration is totally different in conception, as it consists of a garland of groups of three concentric semi-circles with three parallel lines above, all executed in punctures not in incisions. Another vase from Jezerine (fig. 5) strongly resembles that just mentioned, but has no decoration except a single line round the shoulder.

The vase from Jezerine illustrated in fig. 2 seems to deserve inclusion here, as showing a later development of the same shape. It strikes one as the work of a more experienced craftsman, who has produced a thing possessing considerable beauty of form. It is hard to believe that it is neolithic at all, and the fact that no metal objects were found with it cannot be taken as certain evidence that it is earlier than the Bronze Age, but seems rather to be the result of accident. If we can think away the neck and handle we are irresistibly reminded of the Mycenaean stirrup-vase of the best period by the shape of the belly and the foot. Parallels from the Aegean must not be insisted on in Bosnian pre-historic pottery, as the development cannot have proceeded on the same lines; but if we confine ourselves to a consideration of the outline, this vase is as far advanced from fig. 4 as a *Bügelkanne* of the style known as 'Late Minoan III' from the rough pottery of 'Early Minoan III.' It does not follow, however, that the same interval elapsed in Bosnia between the manufacture of the two vases mentioned. This vase (fig. 2) resembles ours from Gardun in its possession of an incised-triangle motive, but this is here confined to the shoulder, and the point where the neck springs from the shoulder is decorated by a raised ridge.

In shape, our vase would seem to be slightly more advanced than fig. 4, and very nearly contemporary with figs. 5 and 6. The ring-foot in the two latter vases need not indicate a greater advance of technique; and as they are larger than ours they might very well have needed a ring-foot to steady them, if they were to be put to any useful purpose. In this connection, it should be pointed out that the majority of the large vases from Ripač rest on a flat bottom,

with no attempt at a ring-foot; this, together with their rough shape, confirms the conclusion that they belong to a series going far back into neolithic times, and therefore the vase in fig. 6, which has a ring-foot, will belong to a late stage of the occupation of the pile-dwelling at Ripač. The punctured pattern which it exhibits can be seen in all stages of its growth in pottery of far more primitive workmanship from the same site, so that we may be sure that it belongs to a later phase of the same culture.

The scheme of decoration on our vase has parallels from both sites; besides the two vases from Jezerine reproduced above (figs. 2 and 4), a good instance of the same motive of incised-triangles with cross-hatchings is seen in fig. 3 on a sherd which is a fragment of a burial urn used to contain the ashes of the dead. It shows the double-triangle motive which appears in our vase, but this is repeated in a similar horizontal zone below; probably the whole body of the vase was thus covered. On the shoulder of the vase is a single row of unhatched triangles (or, if we prefer to interpret it so, a zig-zag line of which the lower angles touch a horizontal line running round the shoulder), also with white pigment in the incisions. This seems a more ambitious scheme than that on our vase, and may very well be much later. Closer parallels are to be found in the four sherds illustrated in figs. 7-10; these all come from Ripač, and are practically the only instances of the use of this motive that were found there. Dr. Radimský observes that the vast majority of the Ripač pottery exhibits the 'rope-pattern' ('*schnur-ornament*'), whereas the triangle—or zig-zag—motive is quite rare there. By a comparison with the neolithic pottery from Butmir, he shows that the former motive is typical of the later phases of North-west Balkan neolithic culture, and, indeed, of the last phases of neolithic culture in Central Europe in general. But the necropolis of Jezerine did not produce any examples of the rope-pattern decoration whatsoever, and, therefore, must not be regarded as neolithic at all, and the same is true of Hallstatt. Thus, the triangle-motive which prevails at Jezerine is obviously of a different, and later, phase of culture than the rope-motive of Ripač and Butmir. The first of the sherds reproduced here (fig. 7) gives us an almost exact parallel to the triangle-motive on our vase; we see that the apices of the two rows of triangles point towards each other

in such a way that the space between them appears as a narrow zig-zag band left in 'body-colour,' so to speak, and the only difference is that inside the triangles in the upper row the potter inserted two other concentric triangles, instead of hatching them with lines parallel to one of the two longer sides. But the work seems hasty, and the lines do not join with the same neatness that our vase exhibits. In figs. 8, 9, 10, we have further instances of the same motive, all exhibiting rather careless work; and in this connection the Jezerine sherd (fig. 3) shows an advance in skill, as I suggested above; as the potter there seems able to fill his whole surface with design without making it look crowded. Between these four sherds from Ripač we can hardly differentiate at all—they might all be the work of the same potter, striving for variety within the same limited conditions; but we can hardly credit him with skill sufficient to produce work like fig. 3.

Of the Jezerine finds, fig. 4 seems, from the point of view of design, to be about on a level with these Ripač sherds, and as I think we may date our Gardun vase slightly later than this, the conclusion is that it represents an advance on the style of the Ripač sherds, though possibly only of a very short time. It is as rash as it is futile to base anything like a certain opinion on the evidence of minute differences of style in pre-historic vase-decoration, but a comparison of the Gardun vase and the Ripač sherds leads, I think, to the conclusion that the former is a more advanced work of art than the latter, and this in spite of the fact that it is easier to create a neat design on a small vase than on a large urn some 25-30 cm. high. But it is only a matter of a very few years, and as it must not be separated from the Ripač vase with the garland pattern (fig. 6 (e)), which it so strongly resembles in shape, we cannot date it later than the last phase of the Ripač culture; but, on this ground, we must connect it equally with the Jezerine vase (fig. 5). The conclusion as to the general style, then, seems to be this: in fabric it is akin to the latest pottery of Ripač, and has close analogies both in design and shape both with this pottery and with the earliest pottery at Jezerine. Indeed, if it had been found at either of these two sites, it would have been an interesting and important link with which to join the closing years of the civilization of the former with the opening years of the latter site. Thus it belongs to the last stages of neolithic



civilization in this district, and must be dated anterior to the vases such as fig. 2 which are contemporary with the earliest finds of metal objects in the necropolis of Jezerine.

But we must not forget that, though it may have close analogies with pottery from these sites in Bosnia, the culture of which it is evident existed on the seaward slopes of the Dinaric Alps, and need not necessarily be assumed to have passed through identically the same stages as that on the inland slopes. It is not until we have further evidence from neolithic sites on the Adriatic slopes of this mountain-chain, which separates the Bosnian uplands from the Dalmatian sea-coast, that we can know what people occupied the latter in pre-historic times. The interest of our vase consists, then, in showing *either* that they had intercourse with the folk inland beyond the mountains, and imported the vase in question, *or* that they had actually the same civilization whose progress is illustrated by the finds from Ripač and Jezerine from early neolithic times down into the iron age. But the correct answer to this question is only to be solved by the spade.

## DISEASE AND HISTORY

*A Paper read before a joint meeting of the Liverpool Classical Association and the Liverpool School of Tropical Medicine, on the 25th January, 1909*

By W. H. S. JONES, M.A.,  
FELLOW OF ST. CATHARINE'S COLLEGE, CAMBRIDGE

It was with diffidence and misgiving that I accepted the invitation to contribute this paper. A schoolmaster, without any medical training, whose life has been spent in the humble task of teaching little boys their Latin, what right can such an one have to address a conference of physicians and scholars? And, indeed, had it not been for Major Ross, who was the first to suggest that malaria influenced Greek history, and other physicians and scholars, whose help has been as generous as it was invaluable, I should never have been able to gather together the few facts about malaria in the ancient world which I am about to lay before you.

But there is another difficulty. The influence of malaria upon Greek history can be estimated only by a careful examination of a number of small points. As many of these as I have been able to discover I have compressed, with great trouble, into a book of nearly 200 pages. How is it possible even to sketch the outline of the subject within the limits of a short paper? But I must perforce try, and I trust that, should I make mistakes or fail to express myself clearly, the historian and scholar will pardon the schoolmaster, the physician the self-taught amateur in medical studies. For I have no axe to grind, no fad to air. My desire is to draw the attention of students to what I think will prove a valuable and interesting sphere of research. I wish to discover some who may prosecute with success a line of enquiry to which I have done but scant justice. The effects of malaria in ancient Greece can be fully appreciated only by an application of the 'comparative method.' Its influence in other countries will throw light upon its influence in Greece. Here is a vast field, of which I have explored but a fraction. The work of collaborators is absolutely necessary.

Of all the sciences, history is perhaps the most intricate as well as the most comprehensive. Even the mere compilation of a

chronicle requires untiring industry, logical acumen and the power to sift evidence with care and judgment; while as soon as any attempt is made to connect cause and result, the historian begins to need the collaboration of other seekers after truth. Accordingly for some time students of history have recognised the importance of political economy, and have acknowledged that wars are due to the jealousies and rivalries of trade rather than to the cupidity or folly of sovereigns and politicians.

But in spite of the progress made in recent years, it certainly appears that history is treated, even by some of its most thoughtful exponents, without an adequate conception of its complexity. History is still mainly political or constitutional; satisfactory efforts have not been made to discover the moral and social ideas of the common people at various epochs and in different countries. Even when the historian does not neglect entirely this side of his subject, he is apt to regard it as affording a few interesting episodes rather than as an integral part of the life of a nation.

But the object of the present paper is not to criticise history as it is generally studied, but to suggest that a little more attention be paid to the influence exerted upon mankind and civilisation by certain diseases. In the fierce and never-ceasing struggle for existence, man has competed, not only with his fellow-men, but also with the minute organisms that cause disease. This struggle is still in progress, but it may be of some service to trace its story in the past. Such a study will not be wasted labour if it arouse interest in the harm, moral as well as physical, which is inflicted on the human race by certain diseases.

It must be admitted that this aspect of history does not lend itself to artistic treatment. One cannot wax eloquent over a microbe. But the microbe, in spite of its inadaptability to the demands of fine art, is pertinacious and obtrusive. It refuses to be ignored, and to deny its power is an ostrich-like procedure which is as irrational as it is ludicrous. For this reason I venture to condemn the attitude of mind shown by a friend of mine, who expressed his conviction that the ancient Greeks were too grand a nation to have been overthrown by an insect. On the other hand, the fanatic is as much in error as the scoffer. It will never be possible to fulfil the hopes of another friend, who believes that the



day is coming when hypostatized virtues and vices will be re-expressed in terms borrowed from medicine or biology. The other factors, economic, political and psychological, must be admitted to their respective places in that complex whole which makes up the story of humanity.

The battle between man and disease-parasites has, like other battles, been fought out with every possible kind of result. When the great Plague attacked Athens in the fifth century B.C., and after raging for a few years disappeared for ever, leaving to posterity an unsolved medical problem, there took place a good instance of a complete victory for man. But if the parasite has been sometimes defeated, it has in other instances been completely successful, at least among certain tribes or on limited areas of the earth's surface. In Uganda sleeping sickness is pursuing a career of almost unchecked devastation. Mr. Hesketh Bell, the Governor of Uganda, in a letter to *The Times*, dated March 2nd, 1908, says that 'out of some 300,000 souls inhabiting the shores of Victoria Nyanza and the islands in the great lake, over 200,000 have already been swept out of existence, and it remains to be seen whether the remainder can still be saved.' I have received from Dr. Otto Effertz, a Governmental vaccinator in Mexico, a long account of his work among the natives. He is convinced that the Indians of the West Indian Islands have been destroyed, not by the cruelties of the Spaniards, but by the virulence of newly-imported diseases, and he mentions in particular typhus, small-pox and measles. At the present day from 50 per cent. to 90 per cent. of all Mexican Indians die from one disease alone—malaria, which Dr. Effertz believes has been but recently introduced into the country. In Asia whole tribes have been swept away by kala-azar. It is more than probable that the fair Northerners, Celts, Teutons, Goths, who on several occasions migrated to the South, never established themselves permanently in the warmer districts in which they tried to settle, only because they were naturally easy victims of malaria. But there is no need to add further to the dark catalogue. The frightful mortality caused by certain diseases, especially in time of war, is but too painfully familiar, and historians are alive to the part played by such in the history of the world. Mediaeval England passed away in the fourteenth century with the Black Death, which, by completely

upsetting the social organism, set free the forces that have created the modern epoch.

In most cases the battle between man and parasite is drawn. In course of time the disease kills off all those most subject to it, and those who remain pass on a natural immunity, partial or total, to their children. At length a stage is reached when the antagonists are evenly matched; the disease continues to kill all those who happen to be born with a constitution more than usually favourable to it, while the remainder either escape altogether or suffer but slightly. Furthermore, increased experience brings increased knowledge, and the rapid development in modern times of scientific medicine gives rise to hopes, destined, we trust, soon to be realised, that these drawn battles may be turned into complete victories for man.

But what are the results, apart from mere mortality, of these continued struggles with disease? Is the life of a nation, its morality and intellectual power, at all affected thereby? The problems bristle with difficulties, but not only would light be thrown upon history by an answer, but a little might be done to shake off the almost incredible apathy as regards national health which is still displayed by a vast number of thinking men, and by almost all the less intellectual portion of the community.

We have seen that the effects of disease are lessened, and certainly obscured, by the action of immunity and by the increase of experience. If either or both of these disturbing factors could be eliminated, the laws that govern the relations between disease and national prosperity would be seen more clearly, and these, due attention being paid to the change of conditions, might be applied to the more intricate cases where immunity (or partial immunity) and scientific prophylaxis have also to be considered. These factors are eliminated when a primitive people is attacked by a new disease, instances of which are quite common at the present day. For some time I have been urging upon anthropologists the importance of carefully noting the effects of various diseases among the savage tribes whose life and customs they are recording. Considerable differences can be observed in the effects of a disease according to the race it attacks and the climate of the district in which it is prevalent, and, until these are satisfactorily recorded and classified,

the biological study of history can make but little progress. A few anthropologists are answering to my call, but I wish that more united and more organized efforts could be made by some influential scientific society.

But I wish to draw your attention more especially to a particular disease, malaria, and to the way in which it affected Greece in ancient times. In this instance the disturbing factor of prophylaxis is virtually eliminated, as malaria cannot be treated successfully without quinine, while a knowledge that the infection is carried from man to man by Anopheline mosquitoes is absolutely necessary if the disease is to be brought effectively under control. Moreover, I am strongly of opinion that malaria was introduced into Greece, or at any rate into some districts of it, in historical times, so that the factor of natural immunity also can be left virtually out of consideration.

Modern Greece is highly malarious. In some regions every inhabitant is attacked every year, as is the case on the plain of Marathon, where the Athenians won their great triumph over the Persians in 490 B.C. In Greece generally from 25 per cent. to 50 per cent. of the population are attacked each year, and as the chief victims are children, it is plain that there is a tendency for the disease to fall on different individuals in different years, so that in time nearly everybody is infected. Summer and autumn are the times when malaria is at its worst, because it is then that the innumerable small streams of the country dry up, forming shallow puddles from which the sun hatches out the deadly Anophelines.

It is obvious that malaria is not a difficult disease to identify in ancient writings. A reference to intermittent fever is conclusive, while autumnal fevers, or fevers said to be caused by marshes, are also probably malarial.

It should be remembered that over-exertion or chill is dangerous in a malarious country, because strain precipitates an attack of fever. Furthermore, as the disease fastens upon particular districts, killing or driving away many inhabitants and reducing the remainder to a piteous condition, it has an economic influence which many other kinds of sickness, destructive though they be for short periods, fail to exert in the long run. This is the most disastrous result of endemic malaria. It poisons whole regions, and, once



firmly established, it generally remains for ever. The rich, the intelligent and the energetic flee to healthier homes, and at last there remains but a residue of the poor and wretched, who, left to themselves, sink into still greater degradation and misery. The inhabitants of the Roman Campagna afford a good example of the general principle I have just been explaining.

What evidence, then, is afforded by Greek literature? Before 500 B.C. there are but two passages which seem to point to malaria. One is Homer, *Iliad* xxii, 31, where, however, some ancient commentators understood the word *puretos* to mean 'heat.' The other passage is Theognis 174, but here again the evidence is by no means conclusive. Many commentators hold that in this line *epialos* signifies 'nightmare' and not 'ague,' the meaning it certainly has in later Greek. Again, Hesiod never mentions fever among the plagues of the Boeotian farmer, although he lived in a country which afterwards became extremely unhealthy.

The argument from silence is, however, proverbially unsafe, and the question is better approached from another standpoint. The early Greeks seem to have deliberately chosen many sites which in later times were scarcely habitable, and upon them they reared great and prosperous cities. Orchomenus in Boeotia is one example, Sybaris in Magna Graecia another. Remembering that pioneers always suffer most, we may surely conclude that these sites were not very malarious at first. Other evidence for the late introduction of malaria into Greece is to be found in the following considerations:—

- (1) In the Hippocratic *Corpus* much stress is laid upon the malignant forms of the disease, and it is when a district becomes infected for the first time that these malignant forms are most common.
- (2) Hippocrates apparently recognised quintan, septan and nonan types of malaria. To imagine that malaria exhibits other periods than the common ones is not infrequently the mistake of a tiro.
- (3) In the fifth century the chief victims appear to have been elderly persons. This is also the case on the first introduction of the disease.

These three points, however, are of but little value as evidence compared with the great improbability that such highly civilised

communities as those of Greece in the sixth and fifth centuries suffered from malaria to any serious extent while they were growing in size and economic prosperity.

The evidence is still more conclusive in the case of Attica and Athens. There is no reference to malarial fever in Aeschylus, Herodotus, Thucydides or Euripides. It is referred to for the first time in a fragment of Sophocles, and it is clearly mentioned by Aristophanes in the *Acharnians* (425 B.C.) and in the *Wasps* (422 B.C.). Ill-health almost certainly became more common in Attica during the last quarter of the fifth century, for we know that the worship of Asclepius, the God of Health, was introduced into Athens in 420 B.C., and a temple was built at which sick folk received treatment, consisting mainly, in all probability, of hypnotic suggestion. Again, two late writers, Plutarch and Diodorus, refer to diseases which followed the great Plague of 430 B.C. They look upon these visitations as a recrudescence of the Plague, and yet their accounts point indisputably to malaria. In the face of all this testimony, it is surely hard not to believe that malaria became far more prevalent in Attica during the period 430-400 B.C. At this time agriculture was almost at a standstill in Attica owing to the Peloponnesian war, and it is well known that to allow land to fall out of cultivation is almost inevitably to invite malaria.

I admit that the introduction of malaria into Greece is of disputed date, but it is absolutely certain, from the witness borne by both medical and non-medical writings, that not long after 400 B.C. Greece became as highly malarious as it is now. After Aristophanes, 'fever' in non-medical literature nearly always means 'malaria.'

What were the effects of malaria upon the ancient Greeks? I would notice first those consequences which were observed by the Greeks themselves. Hippocrates, the first and greatest of the Greek medical writers, who flourished about the time when malaria seems to have become endemic in Attica, has left us in the treatise *Airs, Waters, Places*, a most striking account of the people who inhabited the more low-lying regions of Greece. He calls attention to their enlarged spleens, an almost certain sign of long-continued malaria. He also remarks upon the dwarfed stature and unhealthy appearance of these wretched creatures. Curiously enough, they are said to have had dark hair. This means, in all probability,

that malaria killed off the fair-haired element in the Greek people, and it is to this fair, Northern strain that the Greeks owed their best and noblest qualities. As to the character of dwellers in malarious regions, Hippocrates says that they were cowardly and lacking in enterprise. We have seen that malaria is apt to recur whenever an infected person undergoes any violent exertion. Naturally, the inhabitants of malarious regions avoid fatigue whenever possible, and so gradually form habits of laziness and inactivity. This fact fully explains the statements of Hippocrates, and throws a flood of light upon the treatise of Plutarch *On Health*, in which the writer utters repeated warnings against chill and against over-activity, whether of body or mind. In the book called *Problems*, which is included among the works of Aristotle, although almost certainly not written by him, those who live in damp, low regions are said to show at an early period of life signs of decay and old age. Premature old age is one of the most striking characteristics of those who dwell in malarious districts. Then there is the evidence of language. The Greek word 'melancholia' is undoubtedly connected with the supposed 'humour,' black bile, to which the Greeks attributed quartan fevers. A man was called 'melancholy' when he was neurotic, crazy or morbidly despondent, and victims of malaria often display these symptoms to a remarkable degree. It should be observed that these words, 'melancholy,' 'melancholia,' become common in Athenian literature just at the time when I believe that malaria fell like a blight upon the fair land of Attica. Historical evidence tends to confirm the conclusion that malaria helped to make the Greeks pessimistic; indeed, the philosophy of the third century B.C. made 'apathy' the highest goal of human endeavour.

There are other consequences of malaria, perfectly well known from observations made in modern times, which, although not definitely connected by the Greeks with disease, must have been taking place during the period of decline in Greece.

The chief victims of malaria are children, who suffer from attacks of fever year by year until the age of puberty, when they become partially immune. The effects of this unhealthy childhood they carry with them to their graves. They reach adult life with dwarfed bodies and ill-educated minds. Says the Roman poet Martial, 'In summer boys learn enough if they keep well.'



Malarious districts are usually very fertile. The moisture which favours the growth of mosquitoes is obviously useful for agricultural purposes. When malaria drives away the farmer from the country to the town, it not only inflicts harm by diminishing the number of country folk, but also causes serious economic loss. This is a truism, illustrations of which can be taken from nearly every quarter of the globe. It is surely unnecessary to do more than mention the suffering and damage caused by the incapacitation of a large proportion of the population, especially when it is remembered that agriculturists are the chief victims, mostly at the time of harvest, when their energies are required to gather in the reward of their long toil throughout the year.

I would now lay stress upon a few coincidences:—

(1) The vices and weaknesses inherent in the Greek character, barbarity, want of good faith, insincerity, fickleness, incapability of united effort, become more and more marked during the period of decline. Particularly striking is the divorce of theory from practice, and the general paralysis which cramped the spasmodic efforts of the Greeks, especially in the period immediately preceding the Roman conquest. Coincident with this decline was the increase of malaria, a disease singularly apt to foster habits of laziness, cowardice and apathy. Pausanias thought that the Greeks of the third century B.C. had been weakened by disease.

(2) Alexandria was founded late in the fourth century B.C., and during the next century Greeks crowded into it in great numbers. On the other hand, malaria causes migration from unhealthy to healthy districts, and Strabo notices, with surprise, that even in his day there was no malaria at Alexandria.

(3) During the later portion of its career Sybaris was certainly malarious, and the Sybarites had an evil reputation for laziness and effeminacy. But in a malarious country the inhabitants are forced to avoid fatigue if they wish to escape fever.

(4) In the fourth century B.C., and after, there was a great increase of superstition. A belief in the power of the priests of Asclepius to bring about miraculous cures spread with wonderful rapidity, even among the well-educated classes. The temples of the God of Health were thronged with visitors. Even rational medicine, which at the time of Hippocrates scorned charms as vulgarity, began



to admit the efficacy of amulets and other superstitious devices. On the other hand, there is the increase of malaria, a disease against which rational medicine is powerless without quinine and a knowledge of the part played by the mosquito, while hypnotic suggestion, which was certainly practised in the temples of Asclepius, will often bring about a temporary relief from the distressing symptoms of malaria, although it cannot permanently cure.

(5) After 400 B.C. the Athenians began to love their homes more, and to hold their wives in greater respect and honour. But it was upon the wife that fell the task of nursing the household, even the sick slaves. An increase in her duties as nurse would account for the higher esteem in which she was held by the time of the New Comedy. Now when malaria became endemic, the work of the wife would be more than doubled. The Greeks knew nothing of small-pox, measles, diphtheria, scarlatina, and probably nothing of typhoid or influenza. Malaria and tuberculosis were the only serious endemic plagues. Before malaria became common the work of the wife must have been light, but afterwards she would become a busy woman, and both Menander and the writer of the speech against Neaera insist upon the value of a wife in times of sickness.

Can it be reasonably maintained that there is no causal relationship between these coincidences? That they are all purely accidental seems to exceed the bounds of possibility.

Of course, it is not pretended that malaria caused the decline of the Greeks. The moral deterioration of a people is nearly always the result of an intricate combination of numerous forces and influences. The Greeks, for instance, weakened themselves by their vices, by their suicidal civil wars, and by their obstinate refusal to replenish the worn-out population of their small city-states by freely admitting strangers to citizenship. But I do contend that malaria was the factor which gave to these other disintegrating forces full scope to work out their natural consequences. The good qualities of the Greeks were paralysed by it, while their weaknesses were fostered and encouraged. It was a blight, a miasma, in which nothing could flourish but decay and death.

Here I would meet a possible objection. An opponent, while admitting that the decline of Greece and the increase of malaria were

contemporaneous, may yet assert that the decay brought in malaria, not malaria the decay. Neglect of agriculture, as is well known, by the formation of small puddles or marshy tracts, tends to spread the disease; but malaria appears to have been common in Greece before the decline of agriculture took place. Moreover, the argument is, not that malaria brought about decline, but that it helped other factors, which in different circumstances might have been suppressed or counteracted, to make that decline rapid and inevitable. It matters little which factor gave the initial impetus.

Whatever were the effects of malaria in ancient Greece, they were checked by no adequate preventive measures. Quinine, the great specific for malaria, was unknown. Mosquito-nets do not seem to have been used, at least before the late Alexandrian period, and nowhere do the Greeks show that they were aware of the part played by the Anophelines. The influence of malaria must have been seen at its worst.

I will now turn to the problem of malaria in Italy. The subject is intricate and difficult, more so by far than in the case of Greece, for Greece is a small country, and nearly all its innumerable valleys can breed the Anophelines; many parts of Italy, on the other hand, seem to have remained healthy. I must accordingly confine my attention to Rome and its neighbourhood. Whether these were malarious in early times it is impossible to decide positively; acute observers like Brocchi and North have felt a great difficulty in dealing with the point, and North at least refuses to admit that a highly malarious condition is compatible with the developed civilisation which we know existed in Etruria and Latium. Two questions only can be briefly touched upon now, the increase of grazing land in the second century B.C. and the malarious state of Rome itself during the early Empire.

It is generally agreed that malaria rapidly spread as the small farmers disappeared, and the large thinly-populated grazing estates, managed by slaves, took the places of cultivated holdings. But it has been maintained, e.g., by North, that malaria was the effect and not the cause of this depopulation. A good case could be made out for both views. It is, of course, absolutely impossible to separate definitely the influence of neglect of agriculture upon malaria from the influence of malaria upon the neglect of agriculture. Let it be

granted, however, that economic and other factors gave the initial impulse to the change; the inference does not necessarily follow that malaria did not do incalculable harm. For malaria prevented the Romans from reclaiming the neglected lands. Effort after effort was made, always without permanent success. The Romans spoke truth when they declared that the *latifundia* ruined Italy; it matters not whether malaria was originally responsible for the disappearance of the yeomen.

Let us now turn to Rome itself. That malaria played an important part in the lives of its inhabitants, at least during the first century A.D., can be proved by overwhelming testimony. All who had the means to do so retired to their villas during the unhealthy months, and the language of Horace proves what we might easily have inferred, that the object of this migration was to escape the yearly epidemic of malaria. Children appear to have been the chief sufferers, although adults did not escape. All parents, declares Horace, are afraid for their children in the season of autumn, when the toils of city-life bring fevers and death in their train. Martial too, as we have already seen, was well content if boys kept healthy in summer. Their lessons were of comparatively little consequence. 'Count the tale of my years,' complains the same poet, 'and take therefrom the time stolen by cruel fevers, languor and pain; you will find me an old man in appearance, but in reality a child.' Martial came from Spain, a country which I believe suffered but little from malaria at the beginning of the Christian era, and on migrating to Rome would be attacked more severely than those who, being natives of the city, were partially immune.

In dealing, then, with Roman life the historian must not leave malaria out of account, whatever his views be on the connection between disease and civilisation. A good case could, indeed, be made out by anyone who cared to compare the effects of malaria with the morbid vices displayed by the Romans in early Imperial times. 'Diseased' is the epithet that suggests itself whenever we contemplate the cruelty, the depraved tastes and the deep underlying pessimism which, in spite of the exaggeration of satirist and historian, were certainly marked characteristics of this unhappy period. And diseased it was; for malaria, never entirely absent, was epidemic at Rome during the warmer months. But to connect

disease and vice in this way is unsound reasoning, for even though one caused the other, the relation cannot be proved. Let it suffice to urge that the disease must have been producing its inevitable consequences, and giving free scope to the other disintegrating forces that were in operation at the time.

Whatever may be the views of scholars on these questions, they will admit that a knowledge of the nature of malaria and of its prevalence in ancient times helps considerably towards the elucidation of the classical writers. I will be content with two examples.

Antisthenes the philosopher was reproached by his enemies for frequenting the society of wicked men. His reply was, 'Physicians visit the sick, but they themselves have no fever.' An Englishman, familiar with infectious fevers, is tempted to think that Antisthenes (according to his enemies) was tainted by the company he kept. But malaria, although infectious, is not obviously so, and the ancient Greeks themselves declared that 'fevers' were not catching. Accordingly we must interpret the anecdote otherwise. The enemies of the philosopher hinted that 'birds of a feather flock together.' A man's character can be gauged by that of his associates. Antisthenes denied the truth of the proverb in certain cases, e.g., physicians are not sick because they visit the sick, nor was he base because he consorted with base people. Physician and philosopher have the same object—to cure those who are diseased in body or mind.

My other instance is taken from Virgil. 'Shade,' says a character in the *Eclogues*, 'is unhealthy for singers.' Why so? Evidently because mosquitoes congregate in the shade, and to sit in a wood, or to remain in the open at dusk, is to run a great risk of being bitten. Virgil, although he did not know the reason, was well aware that woods and shade are dangerous.



## SUGGESTIONS FOR A SCHEME OF CLASSIFICATION OF THE MEGALITHIC AND ANALOGOUS PREHISTORIC REMAINS OF GREAT BRITAIN AND IRELAND.

By GEORGE CLINCH, F.S.A. SCOT., F.G.S.

WITH PLATES II AND III

The following scheme of classification, which represents an attempt to reduce our megalithic remains to an orderly and methodical arrangement, is founded upon a paper read before the British Association in September, 1908. Certain alterations, some of which were suggested in the discussion on the paper, whilst others are the result of more mature consideration, have been embodied in the following scheme.

The chief purpose of this classification is to secure uniformity in all attempts to catalogue and record megalithic remains, and it is hoped that the adoption of a definite system of nomenclature and grouping will help to remove much of the ambiguity and overlapping which have characterised some of the work already done in this important field of British archaeology.

In drawing up the following scheme it has been borne in mind that megalithic structures were impossible in some districts owing to the absence of suitable materials. For this reason it has been decided to include such remains as earthen hut-circles, because in a stony country they would probably be represented by low walls built of blocks of stone. In the same way cairns have been included, because in some cases they consist of, or contain, stones large enough to be considered megaliths. Barrows, also, have been included because they are usually composed of the material that happens to be available, and a large proportion of it often consists of stones.

Purely defensive earthworks are omitted, as they are already covered in the scheme of classification adopted by the Congress of Archaeological Societies.

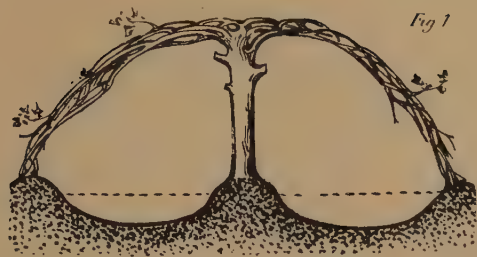


Fig 1

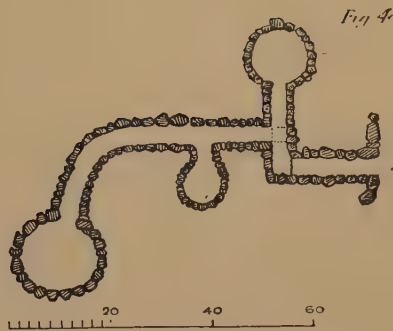


Fig 4



Fig 2



Fig 3



Fig 5

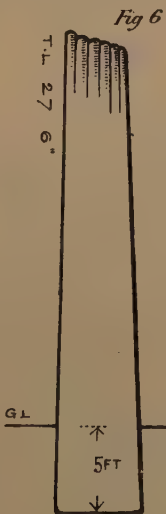


Fig 6



Fig 7





Fig 8



Fig 9



Fig 10.



Fig 11.

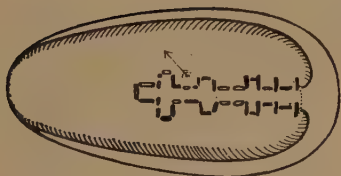
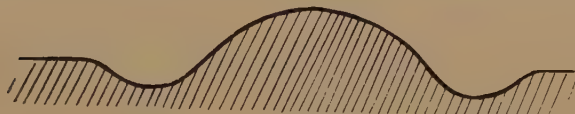


Fig 12.

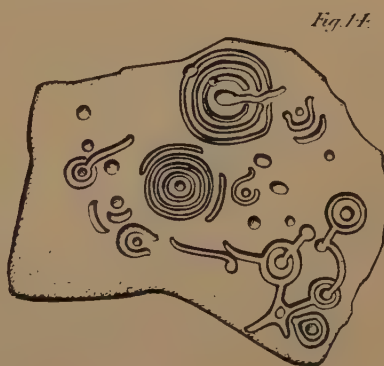


Fig 14.



Fig 15

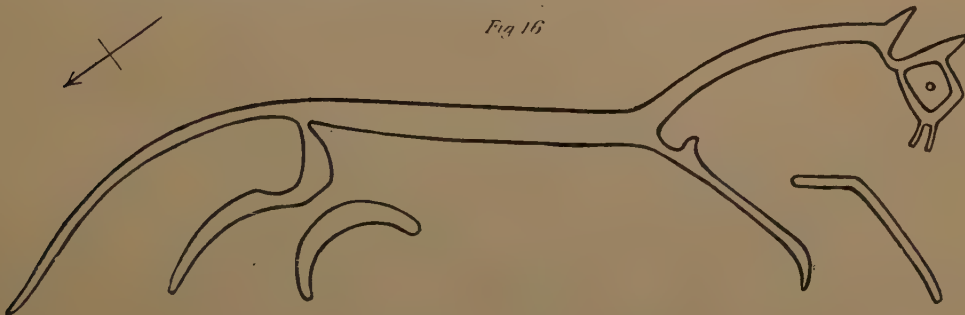


Fig 16





## 1. Dwellings

- (a) Caves.
- (b) Rock-shelters.
- (c) Hut-circles (stone and earth). (Fig. 1.)
- (d) Bee-hive dwellings. (Fig. 2.)
- (e) Crannoges.
- (f) Lake and marsh dwellings. (Fig. 3.)
- (g) Souterrains. (Fig. 4.)

## 2. Monoliths

- (a) Rude. (Fig. 5.)
- (b) Worked. (Fig. 6.)

## 3. Groups of monoliths

## 4. Trilithons (Fig. 7.)

## 5. Alinements

## 6. Avenues

- (a) Open.
- (b) Covered.

## 7. Enclosures

- (a) Circular. (Fig. 8.)
- (b) Rectangular. (Fig. 9.)

## 8. Sepulchral structures

- (a) Cromlechs. (Fig. 10.)
- (b) Cists in barrows.
- (c) Cists not in barrows.
- (d) Cairns.
- (e) Barrows (long). (Fig. 11.)
- (f) „ (chambered). (Fig. 12.)
- (g) „ (round). (Fig. 13.)

9. Earthworks connected with megalithic remains (such as Stone-henge, Avebury, &c.).

10. Sculpturings

(a) Cup and ring markings, &c., on (Fig. 14.)

(i) Natural stones and rocks, or

(ii) Sepulchral structures.

(b) Holed stones. (Fig. 15.)

*Appendix.*


1. Hill-side sculptures (such as the White Horses). (Fig. 16.)



2. Stones or rocks of natural origin and forms associated with folk-lore.


3. Remarkable natural features attributed to supernatural origin (such as the Devil's Punch Bowl, &c.).

# A BIRD CULT OF THE OLD KINGDOM

By PERCY E. NEWBERRY.

In a paper printed in the first number of these *Annals*\* I drew attention to the existence in Egypt of a cult of the Double Axe, and I pointed out that there was a close similarity between the so-called 'Horns of Consecration' of Crete and the Egyptian cult object . I now draw the attention of archaeologists to another connection between the cults of Egypt and Minoan Crete, which has as yet escaped notice.

On the façade of a Fifth Dynasty tomb from Sakkara,† now preserved in the National Museum at Copenhagen, a certain 'Khet-priest of the Double Axe' and 'Vezir,' named Ptah-uash, is also described as  *Wr Khet*, 'Khet-priest of the -deity.' This latter title was also borne by a King's son of the Fourth Dynasty,‡ and by a Princess and Queen of the Sixth Dynasty.§ The high rank of these three people shows the importance of this particular priesthood in the Old Kingdom.


Very little is known on the Egyptian side about this Bird deity. In the *Pyramid Texts* she is often mentioned— *Wr*—and she is referred to also in the *Book of the Dead*, where her name is written with either one of the two general determinatives of a goddess's name—the seated figure of a woman or the uraeus snake. No priests or priestesses of her cult have yet been found of a later date than the Sixth Dynasty, from which fact we may infer either (1) that the Cult had died out altogether soon after the end of the Old Kingdom; or (2) that it was a Lower Egyptian cult|| which survived on in the Delta, although, owing to the paucity of monuments of a later date than the Sixth Dynasty from Sakkara and the country north of Memphis, we have no further record of it.

\* Vol. I, p. 24. 'Three Cults of the Old Kingdom.'

† Published Mariette, *Mastabas*. D. 38.

‡ *L.D.*, ii, 12 a. 13.

§ Mariette, *Abydos* I, pl. 2.

|| The title of the High Priestess at Sais was  (Brugsch, *Aegyptologie*, p. 283)

which perhaps gives us a hint as to the early seat of this Bird Cult. A sarcophagus bearing an effigy of an Egyptian priestess found at Bord el Djedid shows her wearing bird-wings (as ritual robes?). The colouring (a vivid blue), as well as the shape, of these wings show them to be swallow's wings, and not, as Miss Harrison has suggested, vulture's wings. The sarcophagus is in the museum at Carthage, and has been published by R. P. Delattre, *Les grands sarcophages anthropoïdes du musée Lavignerie à Carthage*, Paris, p. 18, and is figured in colour in the frontispiece of Mabel Moore's *Carthage and the Phœnicians*, 1905, and cf. p. 146.



Now the *Wr*-bird as figured in early hieroglyphs resembles a swallow,\* swift, or martin, and there are several facts which tend to show that the swallow itself was regarded as a sacred bird by the Ancient Egyptians. It was often mummified, and many swallow mummies have been found.† In the *Book of the Dead* there is an ancient chapter‡ ‘whereby one assumeth the form of a swallow.’ At Turin is a Nineteenth Dynasty votive stela§ dedicated to the ‘beautiful swallow.’ Plutarch tells us in his account of the Isis and Osiris myth,|| that at Byblus Isis turned herself into a swallow and fluttered round the pillar which contained the coffin of Osiris. Lastly, there still survives among the fellâhin of Upper Egypt a curious superstition regarding the bird. When living in a native house at Kurneh some years ago a pair of swallows built their nest on the side of a ceiling beam in my dining room. I noticed that the natives were very careful to avoid frightening the birds, and asked one of my men why such care was taken of the swallows when they thought nothing of treating cruelly other kinds of birds. ‘Swallows,’ he replied, ‘embody the souls of departed Kurnâwis: they are not like other birds, they live in houses.’ Here is clearly a survival from the days of totemism.¶

We have noticed above that Ptah-uash, who bears the title ‘*khet*\*’-priest of the *Wr*-bird,’ was also a ‘*khet*-priest of the Double Axe,’ and

\* The bird in Petrie's *Medum*, frontispiece, No. 4, p. 30, looks more like a wagtail, but see Griffith, *Hieroglyphs*, figs. 3, 99, pp. 20, 67, and cf., *Beni Hasan*, III, figs. 9, 14.






† Lortet and Gaillard, *La Faune momifiée*, p. 113 (*Hirundo rustica*); cf. Wilkinson, *Manners and Customs of the Ancient Egyptians* (ed. 1878), Vol. III, p. 319, ‘the swallow is found embalmed in the tombs of Thebes.’


‡ Chapter LXXXVI. The first lines of this chapter are found as early as the Middle Kingdom; they occur on the sarcophagi of Sat-bastet (Maspero, *Trois années*, p. 227) and Karenen (Lacau, in Quibell's *Saqqara*, II, p. 41). The vignette of the chapter is a swallow on a mound.

§ Maspero, *Rec. de travaux*, II, p. 108; Lanzone, *Dis. Mit. Eg.*, pl. CXVIII; Maspero, *Premières Mèlées*, p. 536.

|| *De Iside et Osiride*, XVI; on the connection of Isis with the swallow, cf., Pliny, *Hist. Nat.* X, 49; cp. the swallow transformations of Philomela and Proene (Frazer, *Pausanias*, I, 41, 9).

¶ On swallow folk-lore outside Egypt see Hastings, *Encycl. of Religion and Ethics*, under ‘Animals.’

\*\* It is remarkable that in Egypt the title of *Khet*-priest is only found in connection with the cults of the , the , the , the , and the  goddess. I

have been collecting material for a history of the  cult, but will, for the moment, only note that the seat of Min's worship was Ekhnim in Upper Egypt, and refer the reader to the passage in Herodotus II, 91, regarding this place.

this fact is significant when we remember the well-known Hagia Triada sarcophagus\* which gives clear evidence of the association of the Bird† and Double Axe Cults on Cretan soil. It should be noted, further, that on the altar behind the sacred birds are the so-called 'Horns of Consecration,' and that the Knossian Dove‡-goddess was found in the miniature shrine§ with the 'Horns of Consecration.' On Mycenaean remains this Bird Cult is also found associated with the same cult object.

*Postscript.*—Since the above notes were written Mr. H. R. Hall's paper *The Discoveries in Crete and their Relation to the History of Egypt and Palestine* in the last number of the *Proceedings* of the Society of Biblical Archaeology, has come into my hands. Discussing the resemblances between Cretan and Egyptian cults he says (p. 146) that 'Professor Newberry seems to believe' that they 'point to Cretan colonization of the Delta in early times.' I may here point out that I have never expressed this view, always having held the contrary belief—a Nilotic colonization of Crete.

Mr. Hall (p. 145) compares the sacred birds figured on pillars of the Hagia Triada sarcophagus, with birds figured upon *ded*-signs on certain scarabs. These birds on scarabs are simply falcons (not hawks) with suns' discs on their heads. The scarabs on which they are found are all late, certainly not earlier than the Nineteenth Dynasty (see my *Scarabs*, pl. XLI, 13; and cp. Cairo Catalogue, *Scarab-Shaped Seals*, No. 36316); they have no relation whatever to the swallow cult, the subject of my paper. I may note, further, that there were many bird cults in Egypt, for besides the well-known cults of the Falcon, Vulture, and Ibis, we also have evidence of cults of the Pin-tail duck, the Goose, the Crane, the Egret, and several others.

---

\* *Monumenti Antichi*, XIX, p. 1. M. J. Lagrange, *Revue Biblique*, 1907, p. 342, fig. 34; reproduced by Miss Harrison in her paper on *Bird and Pillar Worship*, in *Trans. of the Third International Congress for the History of Religions*, Vol. II, p. 156, fig. 1.

† There seems to be doubt on the Aegean side as to the species of bird which formed the object of the Bird-Cult. Dr. Evans suggests 'a black woodpecker'; Miss Harrison says 'a bird of black colour, possibly a pigeon.'

‡ See the preceding footnote.

§ Evans, *B.S.A.*, VIII, p. 99, fig. 56, cf. also pp. 23-30.

## ON A RECENTLY DISCOVERED SECTION OF THE ROMAN WALL AT CHESTER

By ROBERT NEWSTEAD, M.Sc., A.L.S., &c.

WITH PLATES IV-X

Before giving a description of the recently discovered remains which formed part of the original fortifications of Deva, permit me to point out, very briefly, some of the physical features of the land upon which the City of Chester is built; and also those portions of its circumvallation which are claimed to be of Roman origin, so that we may the more readily understand the geographical relations of these in the light of the newly-discovered fragment which has laid so long buried beneath the feet of the Cestrians.

Judging by the evidence which has been brought to light from time to time, by the spade of the workman, the surface geology of the site upon which the Romans built their camp, in or about the middle of the 1st century, was a small and slightly raised plateau of Bunter-sandstone, overlaid by a thin stratum of boulder-clay and stiff yellowish loam, sloping gently towards the river on both the western and southern boundaries, and with an elevation of about 100 feet above sea-level.

The four main streets which bisect the City within the walls, as we find them at the present day, are laid practically upon the original land surface, so that the ground-level of these thoroughfares is about two feet higher than it was during the Roman occupation.\* Away from the main streets, however, we find on all sides that there is an enormous accumulation of made-earth and *debris*, and that this higher and, so to speak, artificial level is clearly indicated on either sides of the four principal streets by the ground-level of the promenade in the respective Rows. In some places there is, however, a marked thinning down of this artificial accumulation, especially towards the periphery of the walls, though in some parts it is continuous beyond, or considerably in advance of them. The

---

\* WATKINS (*Roman Cheshire*, p. 112) gives 9 feet in the immediate neighbourhood of the Eastgate; but this is certainly not the case elsewhere in the main streets of Chester.



EXCAVATIONS AT CHESTER, 1908.



FIG. 1.—ROMAN WALL (PORTION AT NORTH END)  
SHOWING AT *b* THE COURSING OF THE RUBBLE WORK.



FIG. 2.—WOLF TOWER, WITH UPPER PORTION OF ROMAN WALL,  
LOOKING N.N.W.

*a* Ashlar work; *b* Rubble; *d* Footings of Wolf Tower; *f* Wall of modern cottage.





EXCAVATIONS AT CHESTER, 1908.



FIG. 3.—UPPER PORTION OF ROMAN WALL, LOOKING SOUTH. FOOTINGS NOT EXPOSED.  
*a* Ashlar work; *b* Rubble; *d* Footings of Wolf Tower.



FIG. 4.—ROMAN WALL, LOOKING SOUTH.  
FOUNDATIONS BELOW FOOTINGS NOT EXPOSED.



EXCAVATIONS AT CHESTER, 1908.



FIG. 5.—ROMAN WALL (INTERIOR, LOOKING NORTH).  
*a* Inner face of Ashlar work; *b* Rubble; *c* Clay-loam backing.

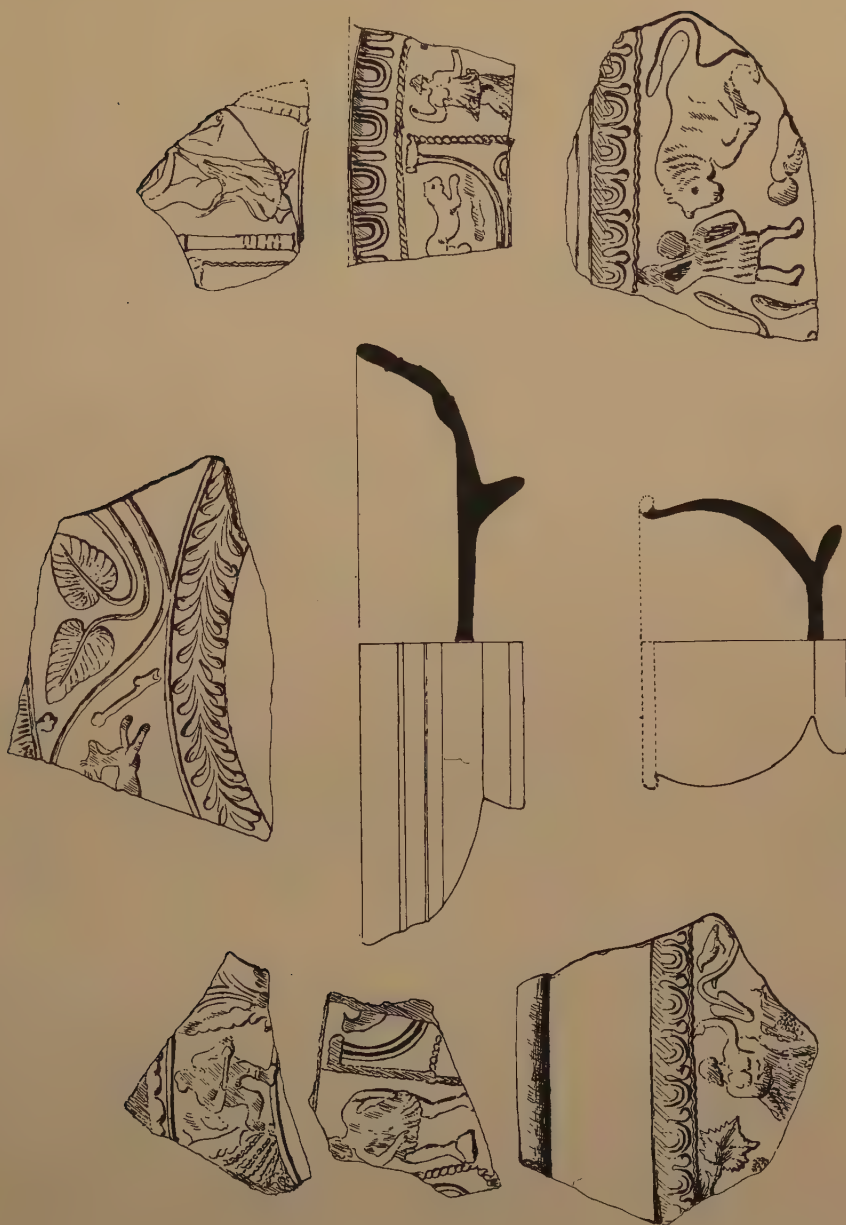


FIG. 6.—ROMAN WALL (INTERIOR, LOOKING SOUTH).  
*a* Inner face of ashlar work; *b* Rubble; *c* Clay-loam backing; *e* Made earth.





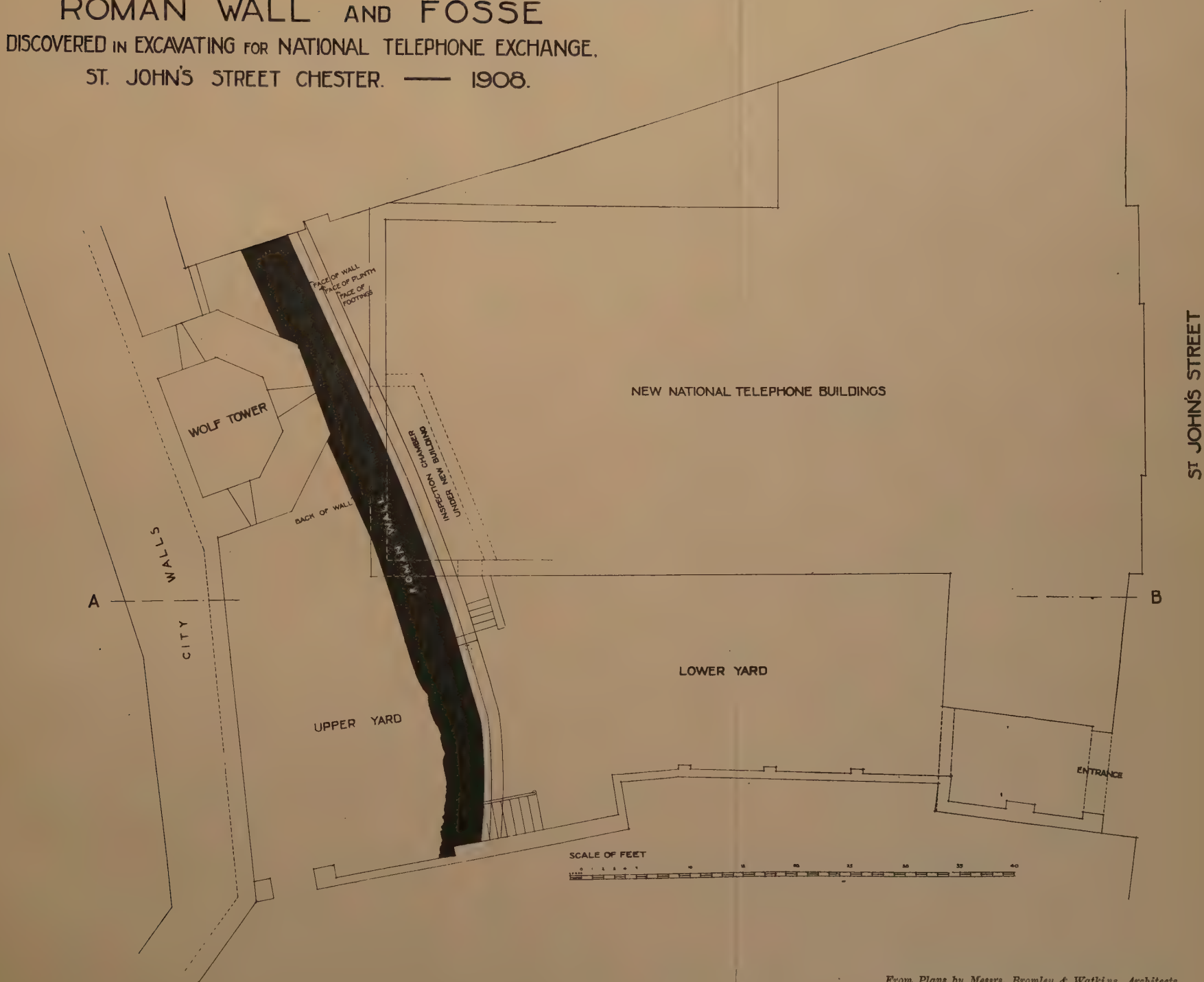
EXCAVATIONS AT CHESTER, 1908.



ROMAN RED-GLAZED OR SAMIAN WARE (Scale to one-half).



ROMAN WALL AND FOSSE  
DISCOVERED IN EXCAVATING FOR NATIONAL TELEPHONE EXCHANGE.  
ST. JOHN'S STREET CHESTER. — 1908.

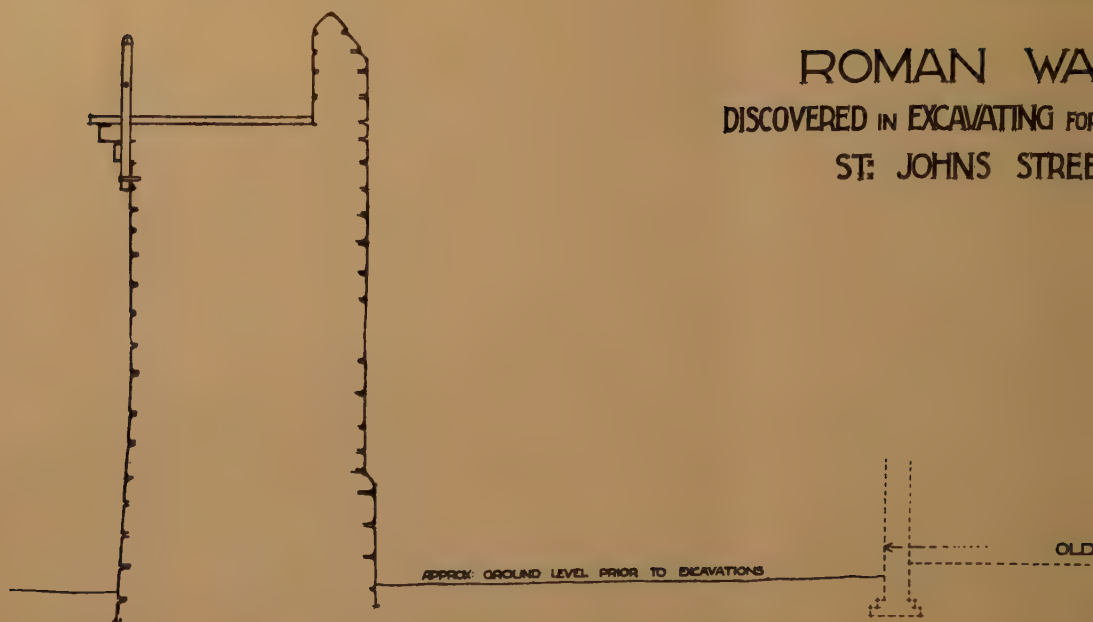






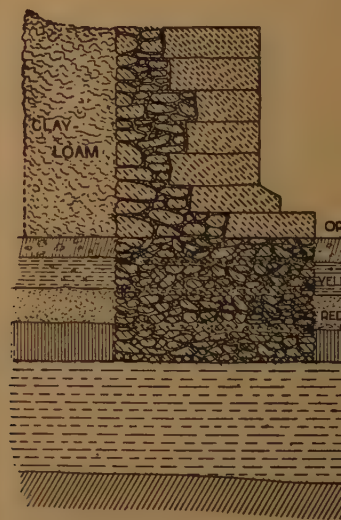


# ROMAN WALL DISCOVERED IN EXCAVATING FOR ST. JOHN'S STREET



EXISTING WALL

MADE EARTH



SCALE OF FEET

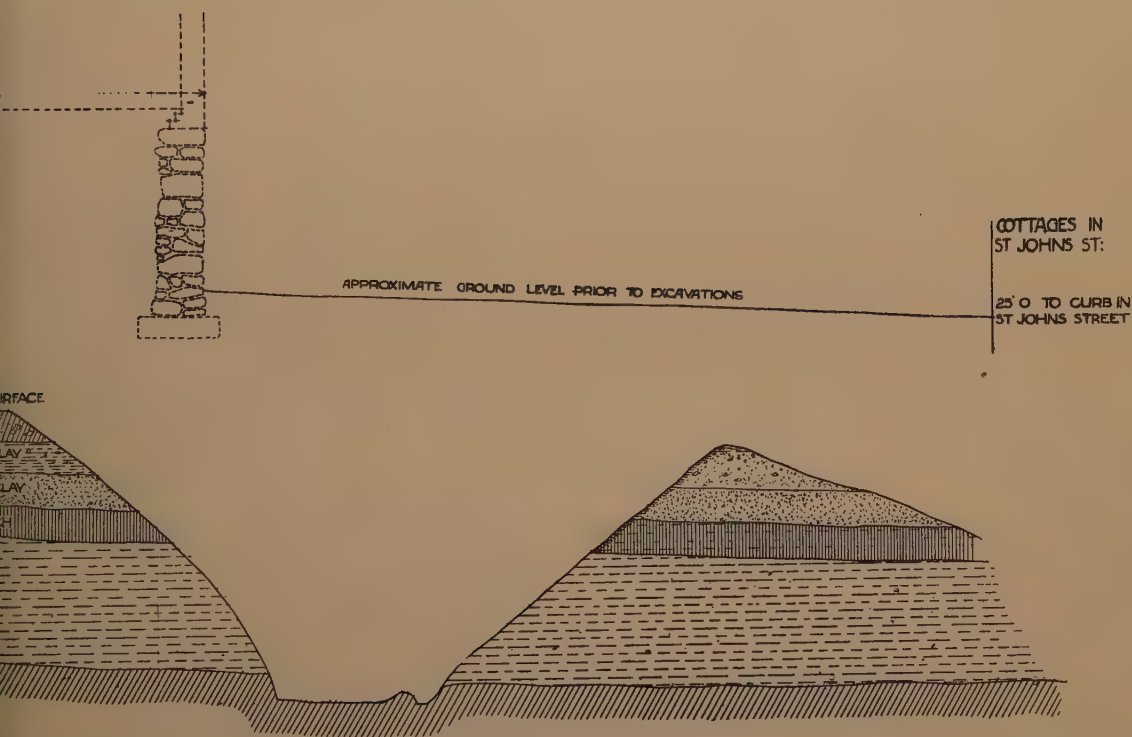


SECTION C

HESTER, 1908.

PLATE IX.

AND FOSSE  
AL TELEPHONE EXCHANGE  
TER . — . 1908.



E. A. B

From Plans by Messrs. Bromley & Watkins, Architects





EXCAVATIONS AT CHESTER, 1908.



FIG. 7.—MOULDINGS FOUND IN FRONT OF THE ROMAN WALL,  
(Scale to one-third).



maximum depth may be given as 14 feet; the minimum about 4 feet; or an average of about 9 feet. Thus, in the centre of Eastgate Street North, immediately east of Godstall Lane, there is a depth of 13-14 feet; while further northwards, under the Lady Chapel,† there is only 9 feet; and as we approach the Northgate there is but a shallow deposit, though in the Dean's field the accumulation runs to a depth of 12 feet.‡

Outside the Walls, on the site of the recent discovery in St. John Street, the depth varied from 14-4 feet; while in Foregate Street, midway between the Eastgate and its eastern end, there is a depth varying from 9-11 feet. Thus, we find that, with the exception of the north wall (east), which rests for the most part on a rocky prominence, there is very little of the Roman work left to us at the present day above the surface of the ground; indeed, a considerable proportion of the older buildings rest with their foundations many feet above the stratum which supported the Walls and other structures of those fortifications which have made Chester so celebrated for its antiquity.

A cursory glance at a map of the City of Chester will give us an exact idea of the plan of the present Walls, and by its aid we shall also be able to gather the relative positions of those portions of it which are claimed by many authorities to be of Roman workmanship, and thereby link together the past with the present discoveries.

If we accept the general census of opinion of those who are qualified to judge as to the origin of the Walls, we may ascribe the major portion of the sub-structure of the north wall, *east of the Northgate*, to be of Roman workmanship. It was in the north wall (east) that so many of the inscribed monuments and architectural fragments were found during the years 1883, 1887-8; and there can, I think, be little doubt that the wall at this point had been reconstructed, though, so far as one can gather, there were no signs of the *outer ashlar-facing having been disturbed*. It must be clearly understood, however, that the whole of the upper portion of the walls on this section of the circumvallation is of comparatively recent date, and is clearly distinguishable from the original work;

---

† SHRUBSOLE. *Journal of the Chester and North Wales Archaeological and Historic Society*, Vol. I (New Series), p. 215.

‡ *Ibid.*, *loc. cit.*



and as one approaches the Northgate one can also follow the course of the characteristic plinth, and the solid rectangular-faced stones forming the footing beneath it. On the west side of the Northgate there is another section, which is of similar workmanship; and although the plinth is not visible, the soil which now covers it was removed a few years ago, so that the footings might be inspected.

Proceeding to the west wall, we find no trace of Roman work southwards until we reach the Roodee, where, considerably in advance of the present wall, we have preserved to us an extensive section of massive masonry, which is claimed by many authorities to have formed part of the Roman quay. No detailed description of this relic has apparently been given, though *Shrubsole*\* refers to it, but considers that it is 'forty feet outside the Roman Castra, and altogether out of the direction of either line of wall.' *Chancellor Ferguson*† also thinks that it may have formed a Roman landing place before the retiring of the Dee; but whether it ever formed part of the wall of the Castra I will not venture to suggest, though there can be little doubt that it was erected there as a protection to the tidal waters of the Dee, which at that period had only just begun to form a barrier to their own encroachments, some twenty feet below the present surface of the Race Course.

At the Kaleyards, on the east side, a little in advance of the modern wall, is a section of masonry measuring in its greatest length 66 feet 9 inches. Four courses of work only are visible above ground,‡ but these bear a most striking resemblance to those forming the ashlar work of the portion just discovered. It would cost a mere nominal sum to have the foundations of this old fragment re-examined, and the period of its erection definitely fixed; though I have little doubt that it is Roman, and possibly 1st century work. 230 feet south of this there are traces of similar work, projecting as a 'set-off' to the remaining portion of the wall; but this section is very difficult of access, and so far I have not been able to make a critical examination of it.

Coming southwards we pass over the Eastgate, and proceed as far as the back of Messrs. Dickson's Seed Warehouse, a few paces

---

\* *Ibid.*, Vol. I, p. 210.

† *Journal Archaeological Institute*, 1888.

‡ No mortar is visible in the joints of this work.

north of the Wolf Tower, where, in the basement of this establishment, is preserved, *in situ*, an excellent section of the Roman Wall, with its plinth and a portion of the foundations quite intact. It lies 15 feet 6 inches outside the existing wall, and was discovered in the year 1892. This brings us to within a few yards of the scene of our most recent find, which commences immediately beyond the south retaining-wall of Messrs. Dickson's building.

*The Recently Discovered Section of the Roman Wall.*

So soon as it was known that the National Telephone Company had purchased the property adjoining Messrs. Dickson's Seed Warehouse, for the purpose of erecting a new Exchange Station upon the site, steps were immediately taken by the Council of the Chester and North Wales Archaeological Society to call the attention of the authorities to the probable existence of a continuation, and the possible termination, of the foundations of the east wall of the Roman Castra. In his reply to the Venerable Archdeacon Barber, Mr. G. H. Robertson (one of the Directors of the Company) very kindly promised to give attention to the matter, and at the same time expressed a wish to give every facility to the Society for the inspection of the ground during the excavations. As Honorary Curator of the Society I was instructed to visit the place, and report upon anything which might be brought to light of archaeological interest.

Early in the month of June 1908, my attention was called to the discovery of some extensive blocks of masonry, a few feet south of the Wolf Tower (Pl. IV, fig. 2), and these subsequently proved to be the upper-courses of the most extensive and perfect section of the Roman Wall which one may safely say has yet been discovered in Chester. Shortly after this discovery, Professor Bosanquet visited the site, and subsequently reported the matter to the Council of 'The Liverpool Committee for Archaeological Research in Wales and the Marches,' who very kindly made a grant of £5 towards defraying the cost of any further excavating which might be found necessary.

Having uncovered the greater part of the wall, it was suggested that the Mayor and the Sheriff of Chester, with the Town Clerk and representatives of the Chester and North Wales Archaeological

Society, be invited to meet the Architects (Messrs. Bromley and Watkins) and the Director of the National Telephone Company, with the view of arranging for the preservation of the wall; Professor Bosanquet and Professor Garstang being in attendance as representing the Liverpool Committee.

After a long discussion, it was decided to leave the matter in the hands of the Directors; and at a subsequent meeting of the Board it was unanimously resolved to alter the original plans of the new buildings, so as to preserve the greater portion of the wall.

This has been accomplished at considerable expense, by placing steel-girders over the Roman work at the two points where, in the original plan, it would have been necessary to remove the greater portion of it. In addition to this, a subway has been made in front of the wall, and the floor-line of the room above slightly raised, so that about forty feet of the wall will be preserved, of which a portion will be left exposed in the open yard, but will be protected with an iron grid. The rest will remain under cover in the subway. By this most excellent arrangement, only sixteen feet at the north end have been buried between two retaining-walls and the tower. It is important to note, however, that the two short upper-courses of seven squared stones had to be removed, as they came above the floor-line of the building; but they have been replaced at the south end, in order to make good that portion of the wall.

The site of the exploration was, until the beginning of the year, covered with dilapidated cottages and narrow courts. After the ground had been cleared of these, the excavations for the basement rooms were commenced, and carried down to the surface of the sandstone rock; and it was while this work was in progress that the discovery was made. At first, it was possible only to expose the northern half of the wall; but a few weeks later, when the ground had been cleared of building material, we were able to resume operations, and to follow the foundations as far as the southern boundary of the National Telephone Company's property. It is quite evident, however, that the wall extends beyond the limits of the present excavations; and we hope to be able shortly to get the necessary permission to sink a trench in a small open space in the adjoining property, so that its further course may be traced as far as possible.



*Details of the Wall.*—The total length of the wall (Pl. V, fig. 4, and Plan Pl. VIII) as at present recovered, is exactly 56 feet 10 inches. Its northern extremity abuts on the retaining-wall of Messrs. Dickson's warehouse, which is 24 feet 3 inches *north* from the *southern face* of the Wolf Tower; and it has been exposed southwards of this point for a distance of 33 feet. It takes a practically straight course until it reaches a point about 22 feet south of the *centre* of the tower, where it commences to curve distinctly westwards, or towards the present Pepper Gate. The face of the ashlar work, near the commencement of the curve, is about 21 feet 6 inches in advance of the present wall; \* but the north-east face of the Wolf Tower rest with its footings upon the rubble of the Roman Wall.

The greatest height of the ashlar work was, approximately, 6 feet 6 inches above the original land-surface, and consisted at this point of seven courses of masonry, inclusive of the weathering-plinth and sub-plinth; but the courses on either side of the higher sub-central portion gradually tapered away, so that at the southern end the plinth and sub-plinth only remained, and these in a not altogether perfect state of preservation.

The whole of the ashlar work had been most carefully constructed, the blocks of stone being laid in very regular and, for the most part, closely jointed courses. The dressing on the outer-faces was so fine as to leave little trace of the workman's chisel; and many of the blocks show distinct signs of weathering. The face-joints (bed and vertical) were in many places so close that it was impossible to insert the blade of a pocket-knife between them; but the same care had not been taken in the interior of the wall, where the joints varied from touching point to as much as 2 inches in width. In one instance only was there found any attempt at the bonding of a second course of squared stones with those forming the ashlar work. It is just possible, however, that a similar form of bonding may have been employed elsewhere,† though it was quite evident that this was exceptional, as the masonry was exposed in several places between the Wolf Tower and the southern terminus.

*No trace of mortar was discoverable in either the bedding or the joints of the masonry; and it was quite evident that none had been*

---

\* The section preserved in Dickson's warehouse is 15 feet 6 inches distant from the present wall.

† Bonded stones are seen in the section in Dickson's warehouse.



used. This was abundantly proved when the masonry forming the two upper-courses was removed, and a most careful inspection made at other available points. The materials used both for bedding and jointing of these large stones consisted of sand (evidently taken from the soft upper stratum of the local sandstone) and a dark-coloured arenaceous earth. Among this material, chiefly in the large cavities and spaces between the rubble-work and the masonry, were found, almost throughout the whole length of the wall, many examples of the garden snail (*Helix aspersa*). The shells of these animals were in many instances so completely imprisoned in the masonry, that it was quite evident that the animals had crawled into the cavities during the construction of the wall, and there perished.

The height of the plinth and sub-plinth, respectively, was 9 inches; and the height of the superimposed courses uniformly 12 inches throughout the whole length of the ashlar work. The dimensions of the squared stones employed in the wall are:—

Largest stone in the sub-plinth	...	3ft. 7½in. × 3ft. 7in. × 9in.
Smallest       "       "	...	Of similar dimensions.
Largest in the weather-plinth	...	2ft. 3½in. × 3ft. × 9in.
Smallest       "       "	...	1ft. 6in. × 2ft. × 9in.
Largest in the ashlar courses	...	4ft. × 2ft. × 12in.
Smallest       "       "	...	2ft. × 2ft. 6in. × 12in.

The first measurements given are those of the length of the stone; the second of the width from front to back; the third of the height. Immediately behind the masonry was a backing of rubble-work, more or less coursed to correspond with the masonry (Pl. VI, figs. 5, 6); though this was not in all cases strictly followed. The facing of this rubble was perfectly vertical, though it presented a distinctly jagged edge (figs. 5, 6, and Section Pl. IX). It naturally varied in thickness owing to the irregular lengths of the masonry which projected into it; but the latter and the rubble-work together, gave an average thickness from front to back of 4 feet 6 inches; the maximum being 4 feet 7 inches. The rubble was formed of roughly-hewn fragments of rock, varying in size from a few inches square to examples 8in. × 6in. × 4in.; 12in. × 8in. × 4in.; 27in. × 5in. × 4in., &c. None of the fragments showed signs of having been dressed, but in a few instances they had been roughly squared on one or two sides; the joints were, therefore, generally wide and irregular, and

these had been somewhat carelessly filled in with mortar, which varied in degrees of hardness; but in very few instances was it found of that intense rocklike nature which has so frequently been met with in the concrete foundations found in other parts of the City. Large quantities of *soil* and sand had also been used to fill in some of the cavities more especially so between the masonry and the rubble; it is possible, of course, that some of the mortar may have been reduced to this condition through the removal of the lime by the action of water; but the soil and sand occurred in so many instances in pockets and crevices which were surrounded by mortar, that I do not think that water could have brought about the conditions which were found to exist.

*The foundations*, as will be seen from the section (Pl. IX), were solid and deep, and built entirely of rubble of precisely the same character as that which formed the inner-lining to the masonry; in fact, it was a continuation of this form of work, and it was also seen to be placed in more or less regular courses. The lowest course of all was, however, formed of a single layer of boulder-stones bedded in mortar, and these rested upon a stratum of soft undisturbed red sandstone. Coarse river gravel and silt were freely used with the mortar in these foundations.

*Artificial backing of earth behind the wall* (Pl. VI, figs. 5, 6, and Section Pl. IX).—Behind the rubble-facing of the wall was found a solid bank of fine stiff clayey-loam, somewhat mottled, and veined with yellow and white, having many fine fragments of charcoal in its composition. In some places it was decidedly more arenaceous than in others, more especially the inner half; but the whole formed a tough stiff loam which may have been produced by placing layers of closely packed turf together. This backing of earth showed, in one section, a thickness of 2 feet 9 inches, and for a height of 5 feet had a perfectly vertical outer-face corresponding to the height of the masonry from the base to the weather-plinth on the opposite side of the wall. Its thickness at other points cannot, at present, be ascertained, but it is seen to be continuous for about 15 feet north of the section which was fully exposed; so that one may infer that it formed part of the rampart, though, unfortunately, we cannot at present find any trace of its having been protected by a pitching of stones or masonry. The line of demarcation between this artificial

backing and the made-earth and debris behind it, was so clearly defined that there can, I think, be no doubt that it formed part of the original structure of the wall of the camp. Considering it as such, this additional structure gives us, together with the masonry and the rubble, a total thickness, over all, of 7 feet 3 inches, but whether this represents the total width of the rampart is doubtful, as the made-earth behind it, which is undoubtedly of a much more recent period, cannot at present be excavated. It is tolerably certain, however, that the vertical wall of clay could not have retained its present form without some substantial support in the form of masonry or stonework; and if such a structure existed, it may in all probability have been removed at a later date, and have been used for some other purpose.

The stone used in the masonry and rubble work consisted entirely of the local red sandstone of the Bunter pebble-beds, and is of the same formation as that upon which the foundations rest; there was no trace of any of the material having been brought from the Upper Keuper sandstone at Manley or elsewhere. The pebbles used at the bottom of the foundations were all such as could have been obtained in abundance from the boulder-clay everywhere in the immediate neighbourhood of the camp.

The builders' *modus operandi* was, so far as one could ascertain from the excavations, to cut a trench a little wider than the total width of the foundations, and from 4 feet to 4 feet 6 inches deep, passing through the following strata, each averaging about one foot thick: made earth, yellowish boulder-clay, red arenaceous clay, soft rock (locally known as 'roach'), to the surface of the more solid shaly sandstone (Section Pl. IX). No trace of a 'set-off' was discoverable on either side of the foundations; indeed, the course of boulders was, if anything, slightly shelved under, and they were placed somewhat similar to ordinary pitching, though very little care had apparently been taken in placing them.

*Objects found in the wall.*—Reference has already been made to the number of shells of *Helix aspersa* which were found in the cavities and among the loose earth and sand which had been used to fill in between the masonry and rubble. The bones of a frog were found in a cavity between the joints of the masonry; and a portion of the pelvis of a sheep between the masonry and the rubble. On

the bedding surface of the large worked-stones were found, in several places, little collections of fine charcoal and coal, but more especially so on the inner projecting stones. A sharp look-out for pottery was kept, but none was found, the only object recovered being a small fragment of amber-green glass, which is, so far as one can judge, of a totally different colour from any Roman glass hitherto recovered from excavations in Chester.

*Objects found immediately in front of the wall.*—In cutting a trench 4 feet wide in front of the entire length of the wall, many fragments of worked stones, as well as a few more or less perfect ones, were found. These had undoubtedly formed part of the superstructure of the wall, as they were of the same thickness as those which were used throughout its structure. In addition to these, three broken moulded-stones, and a small fragment of the drum of a small column, were found at various places, chiefly, however, in the space between the level of the plinth and the first ashlar course of masonry. Scattered very sparingly between these, throughout the whole length of the trench, were fragments of large amphorae, flat-flanged roofing-tiles, and half-round imbrices of the characteristic Roman type; a portion of a mill-stone; one piece of Roman glass; a bone pin; fragments of cinerary urns in Upchurch ware; and one small piece of red-glazed Samian ware; but no other remains of the fictile art were discovered immediately in front of the wall. Here also were found the horn cores of the ox and goat; of the former there were two distinct types: the smaller horn cores are probably those of *Bos longifrons*; and one, which is unfortunately imperfect, is from a much larger animal, and may prove to have belonged to an immature example of *Bos primigenius*. The base of this bone has a circumference of  $9\frac{3}{4}$  inches; while those of the *longifrons* type measure only  $5\frac{1}{4}$  inches. At a point exactly 7 feet south of the Wolf Tower, and 21 inches from the base of the masonry (sub-plinth), was a narrow pebbled footway (?), formed of small boulders, extending eastwards and at right-angles to the wall. The stones were laid in two irregular rows, extended for a distance of 4 feet 3 inches, and were firmly embedded in the upper stratum of the boulder-clay. I can assign no use for this little paved way excepting that it may have been used as a temporary footway during the construction of the wall.



*The fosse* (see Pl. IX).—This was excavated in two places, and a portion of it was exposed in a third. The first trench was cut in a line immediately south of Messrs. Dickson's retaining wall; but it was so faintly indicated at this place owing to land having been intersected by a cesspool, that it was impossible to follow its original form with any degree of exactness. Later, a second trench was cut some 20 feet south of the Wolf Tower, and here the form and dimensions could be distinctly traced, especially so in the lower portion which had been cut through the upper stratum of rock. It was not of the usual V-shaped form, owing to the construction of the bottom, which was broad and flat, measuring about 4 feet 4 inches in width. Its greatest width from lip to lip was not so easily ascertained, but it measured, approximately, 22 feet; and its greatest depth, taken from the level of the lowest course of masonry or sub-plinth, 9 feet 3 inches. A well-defined channel had been cut in the rock at the foot of the outer-wall of the ditch, on the east side, which was subsequently traced northwards for a distance of 12 feet. In one of the sections the rock at the bottom of the trench sloped gradually towards the channel, so that it may have been used to carry off the surface water. In sinking a shaft for the foundations of a column the ditch was again intersected, though, in this instance, the inner-wall only was exposed; here, the rock had been hewn out to a depth of 4 feet 6 inches, and the face of it gave an angle of 45 degrees, approximately.

The filling of the ditch, between the level of the lowest course of masonry and the bottom, consisted of the following materials: the first three feet of arenacious clay (? rain-wash), with pockets and irregular layers of black soil, containing small fragments of charcoal and a few plant remains; five pieces of waste bronze; two fragments of Roman roofing tiles; and one of an imbrex, were found in this stratum. In following the course of the channel at the bottom of the ditch, a quantity of the earth removed from it was found to contain a large percentage of bright blue colouring matter, slightly crystalline in form, but appearing to the unaided eye as a fine powder. It was so mixed with the soil as to render it impossible to collect any appreciable quantity for analysis; but examples have been preserved with the soil. Above this layer was a stratum, averaging 4 feet 6 inches thick, of black cheesy soil, composed

largely of vegetable matter, including an enormous amount of very small bits of bark and wood; many hazel nuts; a few bones of the goat, sheep, ox, horse, and the domestic fowl; portions of pitchers, jugs, and tegs, of the 14th to 17th centuries; leather, bricks, fragments of rock, &c., &c. The bark and small fragments of wood may have been the waste from a local tannery, as Chester was, at one time, a noted centre of the tanning industry. One small piece of wood taken from this stratum was in a sub-fossilised condition, the central portion having been replaced by hydrated mineral matter.

The upper stratum, averaging 7 feet 6 inches, had been intersected by the foundations of cottage walls, and was made up of all kinds of debris: such as soil, ashes, shells of the cockle and mussel, building materials, potsherds, &c. The inner-lip of the ditch was about 4 feet 6 inches from the face-line of the sub-plinth, or, approximately, 6 feet from the face of the wall proper; but the superincumbent earth above the level of the plinth contained many fragments of *tegulae*, and other objects of the Roman period. The skull of a horse, in a fairly good state of preservation, was found on the outer-surface of the outer-lip of the ditch.

*Description of the objects recovered from various parts of the excavations.*—With the exception of a beautifully preserved flint axe\* of the palaeolithic type, the objects recovered from these somewhat extensive excavations were very few in number, and of such a fragmentary or imperfect character as to require but a brief description. Apart from the prehistoric implement, only such other finds will be described as can be attributed to the Roman period.

*Coins.*—Only two were handed over by the labourers, though a third example was recovered from a local tradesman, who had purchased it from one of the workmen employed in making the excavations. One of the coins is probably that of Hadrian (A.D. 117-135); the obverse has the Emperor's head to the right, but the lettering, and also the reverse, are so badly oxidised and scratched that it is impossible to decipher the legends. The second example is a small and imperfectly struck coin, with the legends wanting; the obverse with the Emperor's head to the right; the reverse a figure standing. The third coin is a second bronze of

---

\* See Appendix II of this Report.

Vespasian, in excellent preservation. Obverse, Emperor's head to the right, with the legend: 'IMP. CAES. VESPASIAN AVG. COS . . .'. Reverse, an eagle with wings displayed, and the legend 's.c.' near the margin.

*Objects in bronze.*—Two small buckles, almost identical in size and shape, were the only personal ornaments recovered; these measured  $1\frac{1}{4}$  in.  $\times$  lin., and one of them bears about ten deep transverse ridges on each of the lateral rims. Two large nails, one with a thin hemispherically shaped head, the other with a quatrefoil head, were found in an imperfect state of preservation; a small piece of waste sheet bronze; one fragment of bronze slag; and the five pieces of waste bronze from the trench complete the list of objects in this metal.

*Pottery.*—The eight fragments of figured Samian ware which were found, are all from bowls of the common hemispherical type, many of them having the ovolo border, or egg and dart pattern, below the rim. The styles of ornamentation are shown in the accompanying figures (Pl. VII), so that further description is not necessary; all the more so seeing that they do not differ in any marked degree from examples found hitherto in other parts of the City. On the same plate are shown the section and plan of a small cup and a large saucer-like bowl, both in plain Samian ware, but, unfortunately, in a fragmentary condition, about one-fourth of the vessel being represented in both instances. No graffiti or potter's names were found on any of these fragments.

Of the dark-grey ware, known as 'Upchurch,' there are about eleven fragments, all apparently of the common types of cinerary urn met with so freely in other parts of the City; one of these bears the characteristic diagonal pattern in lines. There are, besides these, several pieces of terra-cotta ware; four large fragments forming part of the lower basal portion of a large wheel-made amphora or similar vessel, having a broadly pyriform base, with a diameter of  $11\frac{1}{2}$  inches.

*Tiles.*—Attention has already been called to the occurrence of fragments of flanged roofing-tiles near the wall and in the fosse. They occurred elsewhere throughout the excavations, but were by no means plentiful; and bits of the ridge-tiles, or *imbrices*, were even scarcer.

*Glass.*—Roman glass has always proved to be scarce in Chester, and this site was no exception to the rule. Three fragments of a pale-blue bottle of the usual square pattern were collected. These consisted of a small piece of the rim or lip; a fragment of the base; and a flat-reeded handle a little over 2 inches in breadth at the point of its attachment with body of the vessel.

*Stone objects.*—A small section of the lower stone of a quern of vesicular lava was taken from the trench immediately in front of the wall. In section it is more or less wedge-shaped, tapering on both sides gradually towards the centre. The outer-edge measures  $2\frac{1}{4}$  inches; the inner-fractured end one inch; its original diameter being, approximately, 16 inches. A well-shaped spindle-whorl made from a piece of fine, soft, grey grit, about  $1\frac{1}{4}$  inches in diameter, was found just above the boulder-clay, or near the foundations of the wall. One may assume, therefore, that it is of Roman workmanship.

*Objects in bone.*—One roughly-formed bone-pin was found near the foot of the wall. It measures  $6\frac{1}{2}$  inches in length, and still retains the sharp edges left by the instrument used in its manufacture. Another bone, evidently also intended for a pin, was left in an unfinished condition, and was found just above the stratum of boulder-clay.

*Classical moulding.*—Three fragments, of which sections of two are shown on Pl. X, were taken from the trench immediately in front of the wall. The most perfect example shows the typical ogee moulding, with two fillets above and one below. One piece is very much weather-worn, the others are not so. They are identical with the fragment found near the wall in Messrs. Dickson's warehouse.

Having considered the structural details of this interesting discovery, it remains to be seen how far it agrees with those other portions of the fortifications of Chester, to which I briefly referred at the commencement of this paper.

*North Wall—East of the Gate.*—The portions of this wall claimed to be of Roman origin differ from the newly-discovered section in the following details: the courses are of varying heights; the sub-plinth is formed of two courses of masonry; and in the place of a rubble-backing, set in mortar, the interior was found to contain architectural fragments and inscribed monuments of the Roman period, thrown in promiscuously. Broadly speaking,



therefore, it agrees in one point only, and that is in the absence of mortar in the masonry. The wall is, however, backed with earth on the inside, but whether this is of a similar character to that found recently I cannot say; as, so far as I can trace, no detailed description of it has been given.

*West Wall.*—Judging by a superficial examination of the masonry at the Roodee, this is a much more massive piece of work, and the beds of worked stones are laid at least two deep, and they are set, apparently, without mortar. No plinth has been found, though the wall has been excavated to a depth of 15 feet,\* so that, on the whole, this work bears the least resemblance to the newly-found section of any.

*East Wall.*—At the Kaleyards one finds the same kind of ashlar work without any trace of mortar in the joints. The plinth of this section is not now visible; but Mr. I. M. Jones† found it at some depth (no figures given) below the ground, and says that it is of the same character as that in the North Wall; and further, that he did not find ‘any trace of concrete backing.’ He is silent, however, as to the exact nature of the interior, and, moreover, he makes no reference as to the character of the foundations below the plinth. It is impossible, therefore, to say what the structural details of this section are like, without further investigation; but, judging by its external appearance, there can be little doubt that it is of the same kind of workmanship and of the same period as the section under discussion. The fragment preserved in Messrs. Dickson’s warehouse is, structurally, identical in all its details.

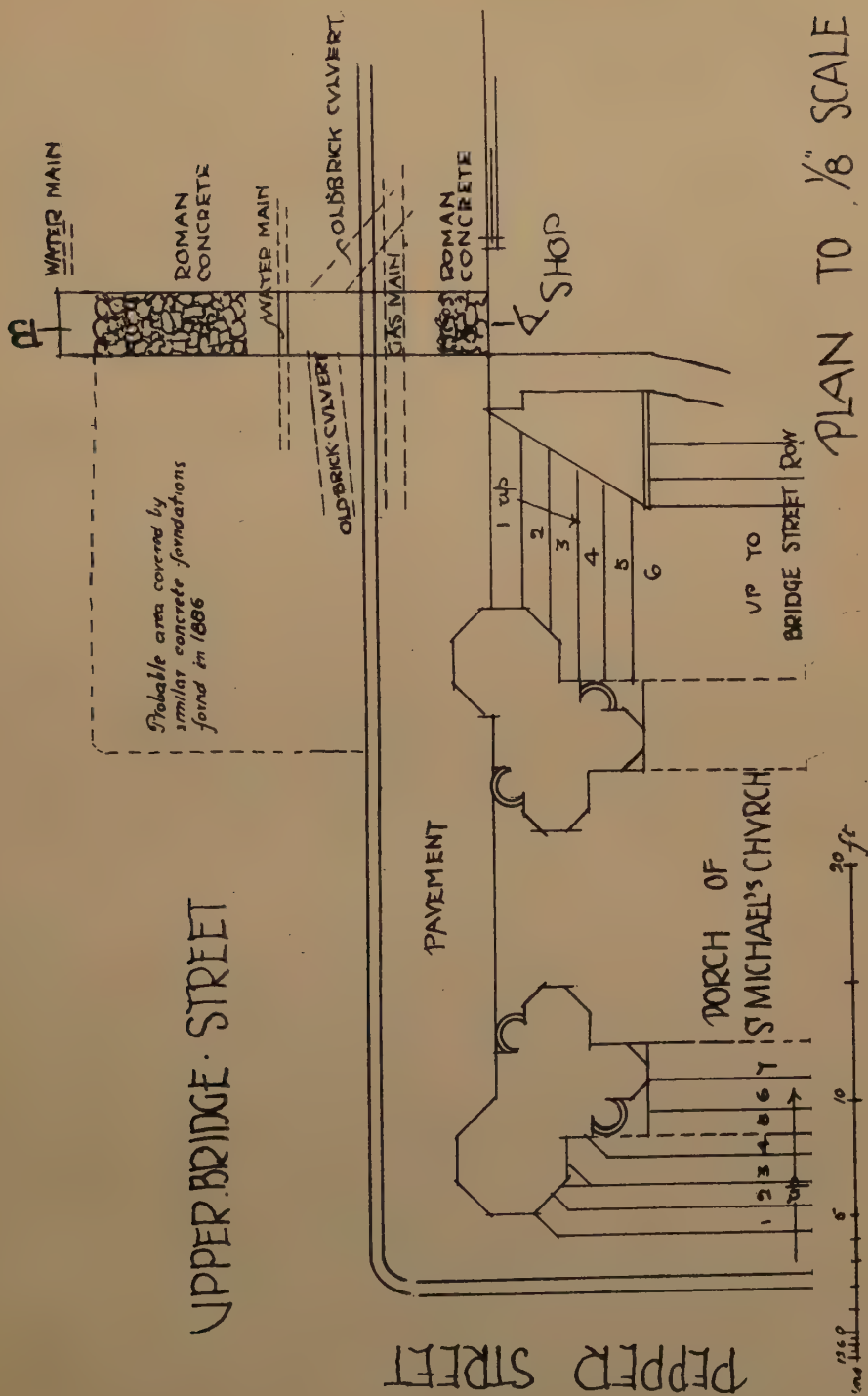
### *Conclusions*

Taking all the facts into consideration, the evidence is fairly conclusive that the newly-found portion of the east wall differs in a somewhat marked degree from the substructure both of the north and west walls. While admitting this, I wish it to be clearly understood, however, that I do not dispute the Roman origin of

\* Mr. I. M. Jones, in comparing this work with that in the North Wall, says that he found the large stones, erroneously described as footings, had more than fifteen feet of the same massive masonry underground; ‘the actual footings I have not accurately determined, owing to four or five feet of water being above them, but I have shown them as square on the annexed drawing.’ (The drawing referred to was not published.—R. N.).

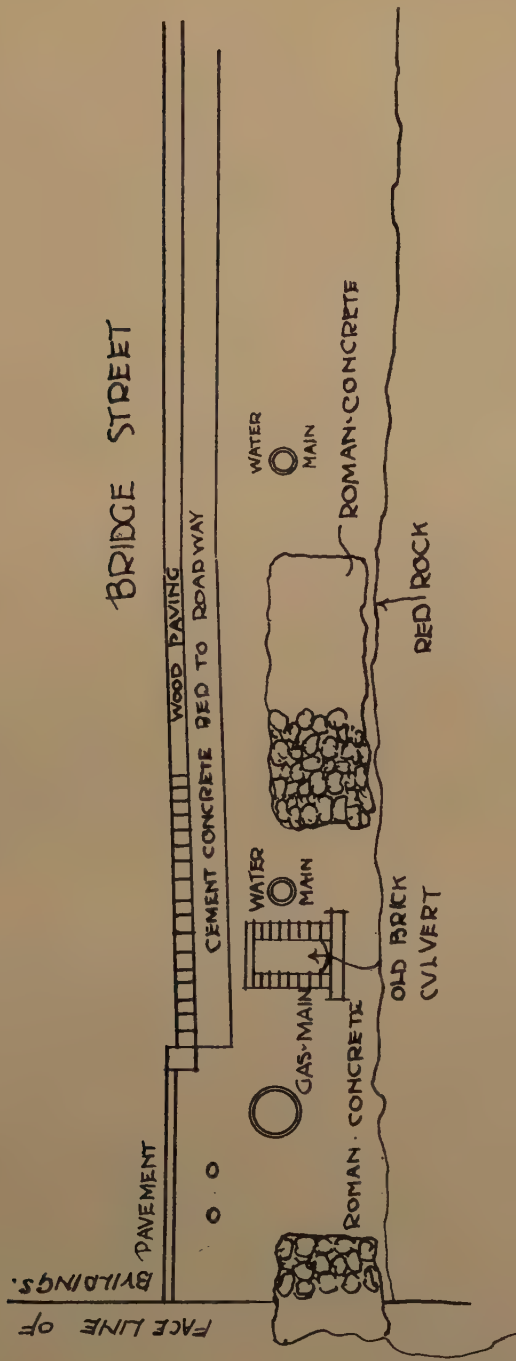
† *Journal of the Chester and North Wales Archaeological and Historic Society*, Vol. I (New Series), p. 190.

EXCAVATIONS AT CHESTER, 1908.





EXCAVATIONS AT CHESTER, 1908.



A B SECTION TO 1/4" SCALE







these fragments of the old wall; I am, at the same time, not unmindful of the fact that objections and counter-claims have been advanced by eminent archaeologists as to the period of their erection.

As to the age of the present discovery, I have repeatedly referred to it as of Roman origin, and I have based this supposition upon its structural details, the presence of the ditch in advance of the wall, and the finding throughout the whole length of its exterior many fragments of Roman tiles, pottery, bone-pins, and glass, all of which were not intermixed with similar remains of a later date.

One other point should be emphasised, and that is the distinct curve at the southern portion of the wall. There can, I think, be no doubt that we have, for the first time, discovered the south-east corner of the Roman wall; and although we have not followed the complete length of the curve, sufficient has been uncovered to show that the south wall of the Roman camp extended in a line drawn due west, from a point at or near the Pepper Gate to Blackfriars. That such a line was followed by the south wall of the Roman camp has, I believe, never been disputed; but the only evidence in support of this was the discovery in Bridge Street, west of St. Michael's Church, of an extensive concrete foundation, thought by many to indicate the presence of the 'south gate'; and the presence, some few paces south of this, of a deep wide 'drain' (? Roman fosse) cut into the solid rock. The supposed foundations of the south gate have been, in part, recently laid bare; the particulars of which are given in the Appendix I to this Report.

## APPENDIX I

### WITH PLATES XI-XII

#### *On a Roman Concrete Foundation in Bridge Street.*

On the 30th June, 1908, in the course of excavating for a drain from Lloyd's shop (No. 63), immediately on the north side of St. Michael's Church, some workmen unearthed and cut through two sections of a Roman concrete foundation. The first section (marked *a* on the plan) lies immediately under the face-line of the shop in question, and projected about 12 inches under the pavement; but how far it extended beneath the floor of the shop it is impossible to say, as the excavations were not continued further in an easterly direction.

The second and larger section of the foundation (marked *b* on plan) measured, in its greatest basal-length, on the south side of the cutting, 6 feet; the greatest depth from the surface to the base-line, approximately, 2 feet, tapering off towards the western extremity to about 12 inches, in some places slightly less. Its eastern extremity lies exactly 10 feet from the face-line of the building; and both sections lie about 2 feet from the surface of the present street-level. A section of about 2 feet 6 inches was removed from the larger block; the north and south portions being left intact. That portion of the concrete which projected into the street under the footway was entirely removed, but, as far as one could gather, a large section was left immediately under the doorway of the shop.

The concrete was formed of relatively small boulder-stones from the glacial drift, and they were irregularly but carefully imbedded in mortar, which for hardness almost equalled that of the boulders. The sand employed in the manufacture of the mortar was reddish in colour, and had probably been taken from the soft upper-stratum of the Bunter beds. A much larger proportion of it had been used on the outside (west) of the foundation, and it was here that the concrete was of a decidedly softer nature. Plant remains and small splinters of wood occurred sparingly in the mortar; and, among the former, one recognised some short split stems of the common bracken (*Pteris aquilina*), and wheat straw. One noted also that there was a marked presence of fine dark organic matter surrounding the pebbles at both the eastern and western extremities of the foundation, where the larger proportion of sand had been employed. This matter may have percolated through the superincumbent earth, but it is much more likely to have been present upon them when they were imbedded in the mortar.

It was quite evident that less care had been given in the preparation and laying down of the foundation on the western extremity of the larger section than that of the more central portion, as it was placed less regularly, and, in consequence, was much more easily removed than the thicker portion. The lime employed in the more solid parts was also of a slightly different character to the rest, having, throughout the whole of its composition, large and more or less angular patches of pure lime without the admixture of sand. On referring to the plan it will be seen that the space between the two sections of concrete is intersected by the

gas and water mains, and, sub-centrally, by an older brick-culvert. I am informed that the concrete was removed when the pipes were laid, so that it is quite evident that the foundation was, prior to the laying down of the mains, quite intact and continuous along the line drawn due east and west in the section (*a, b*) shown in the drawing accompanying this Paper.

There can be no doubt that these remains are a continuation, *northwards*, of the extensive foundations discovered in or about the year 1886, and referred to by the late Mr. Shrubsole,\* in his Paper on the 'Walls and Streets of Deva,' as 'covering an area of 14 feet under the steps of St. Michael's Church'; but the only details he gives are that 'the concrete was composed of small boulder-stones bedded in the usual mortar'; and further, that 'it was so unyielding that it was not possible to procure a specimen of it for the Museum.' It is not a little disappointing that he has given us such a meagre description of this find; though it is clear that he attached considerable importance to its discovery, inasmuch as he claimed the foundations to have been those of the southern gate of the Roman wall. In a later Paper he again refers to this concrete foundation, and it is important to note that, in this instance, he describes its position as being '*by* the tower and steps' of the Church;† so that one may safely infer that it extended into the street, and that it was not altogether '*under*' the tower steps leading into the Church. On looking at the plan (Pl. XI) it will be seen that there are two sets of steps under the tower of the Church: one facing Bridge Street, the other facing Pepper Street; so that, in the light of Mr. Shrubsole's description, it is impossible to decide whether he intended the one or the other. Fortunately, however, I have been able to gather, from reliable sources, that the foundation in question extended along the Bridge Street frontage of the tower of St. Michael's Church, and that its position may be *roughly indicated* as lying somewhere within the dotted lines‡ shown in the plan (Pl. XI) at *c*.

---

\* 'Deva: Its Walls and Streets.' *Journal of the Chester and North Wales Archaeological and Historic Society*, Vol. I (New Series), p. 213, 1887.

† *Ibid.*, Vol. III (New Series), p. 78, 1890.

‡ In excavating this site for the water main to the new lavatory, an additional 5 feet 9 inches of this concrete was exposed in April of the present year (1909). This portion of the foundation extended due south along the upper dotted line in continuation of the section shown at *B* in the Plan Plate XI.



## APPENDIX II

WITH PLATE XIII

*On a Palaeolithic Implement found at Chester*

A flint or cherty-flint implement (fig. 8), of distinctly palaeolithic form, was found lying among some fallen debris, which had slipped from the sides of the excavations on the site of the National Telephone Company's new offices. The earth in which it was found was blackish, and from above the stratum of boulder-clay. It was lying 18 feet in advance of the Roman fosse (east), or, roughly, about midway between the outer-lip of this structure and the footway in St. John Street. The exact depth from the surface could not be accurately ascertained as the fall of debris was considerable. That it had been lying amongst building material was quite evident, as a few small patches of lime were firmly attached to it; but it was otherwise covered with soft black soil, when handed to me fresh from the excavations.

It has been formed, apparently, from an outer 'flake' or chipping, taken from a large water-worn boulder, as it still retains two patches, one at the broad end and the other towards the tip, of the original grey-brown surface; it is on this side that the implement has been chipped into shape. The opposite side bears a large conchoidal fracture, with little or no trace of subsequent chipping, and presents a smooth, though uneven and unworked, appearance. The colour of the worked face, which originally formed the outside of the stone, is smoky-brown with greyish and yellow vermiculations, and, to the left, conspicuous spots and blotches of yellow; on the opposite or cleanly-fractured side the yellow preponderates, and the vermiculated and mottled appearance is due to this colour. The surface on the worked side is distinctly 'worn' in appearance, and the edges are blunt and finely chipped, possibly from frequent and constant use. It measures in its greatest length  $4\frac{4}{16}$  inches; and in width  $4\frac{4}{16}$  inches; and the greatest thickness a little less than 1 inch. It weighs  $6\frac{3}{4}$  ounces.

Mr. Reginald A. Smith, of the Department of British and Mediaeval Antiquities and Ethnography, The British Museum, has recently examined the implement and very kindly supplied the

EXCAVATIONS AT CHESTER, 1908.



FIG. 8.—PALAEOLITHIC STONE AXE—EXCAVATIONS ST. JOHN STREET, CHESTER  
11TH AUGUST, 1908 (*actual size*).



following information:—‘You were certainly right in describing it of palaeolithic form. But one can go further and call it frankly a palaeolithic worked flake. Its presence in the soil at Chester is explained by your remark that it was embedded in building material and not in situ. Unless it is altogether exceptional and found in the area not generally regarded as habitable during the palaeolithic period (roughly north of a line from the Severn to the Wash), it must have been brought into Chester from some river gravel south of that line. We have here on deposit a somewhat better implement said to have been found in Lincoln, but can get no confirmation of its occurrence in situ there. The specimen has a typical palaeolithic patination and seems to have been used at more than one period, with a pronounced bulb of percussion. I would suggest that the circumstances of its discovery should be fully stated on a label, and some prominence given it in your museum as an exceptional piece.’  
*In lit.* 17th April, 1909.



# PREHISTORIC FINDS AT MATERA AND IN SOUTH ITALY GENERALLY

By T. E. PEET, B.A.

WITH PLATES XVIII-XXI

Few attempts have as yet been made to give any connected idea of the stone and bronze ages in South Italy. The bronze age, indeed, has received some attention at the hands of Pigorini and Patroni,\* and has even been synthetically treated by Colini in his excellent article in the *Bullettino di Paletnologia Italiana*, Vols. XXIX-XXX. But the stone age has attracted far less attention, and I know of no attempt to deal with the period of transition from the one age to the other.

The reasons for this neglect are mainly two. In the first place excavation in South Italy is still in its infancy. The second reason is a curious one and lies in the fact that so few archaeologists have as yet studied the mass of material which has—some of it for thirty years—lain unpublished in the museum of Matera in the province of Potenza.†

## *The Town and District of Matera*

The town is seldom visited by travellers in South Italy, partly because it has, with the exception of a fine Romanesque cathedral, little of artistic interest, and still more because it lies off the railway and can only be reached by diligence (see map). To the student of folklore this latter fact makes the town of greater interest, for in such a place he hopes to find survivals of manners and customs which in more accessible parts have already disappeared. The archaeologist, however, will visit Matera for the sake of its prehistoric remains, and he will not be disappointed, for in this respect he will find the district to be perhaps the most remarkable in Italy.

It is essential to note the geological structure of the district.‡ Limestone and the *tuffo* which overlies it outcrop everywhere, and

---

\* In *Bull. Pal. It.*, Vol. XXVII.

† See short notices by Ridola in his *Le origini di Matera*, by Quagliati in *Bull. Pal. XXII*, pp. 232 sqq.; by M. Mayer in his *Le stazioni preistoriche di Molfetta*; by Patroni in *Notizie degli Scavi*, 1897, pp. 208 sqq.; and by Pigorini in *Bull. Pal. XVI*, pp. 137-144.

‡ See Ridola, *op. cit.*, p. 4.



SKETCH MAP OF THE DISTRICT ROUND MATERA : FROM THE ITALIAN ORDNANCE MAP.

(The shaded portions represent the principal masses of high ground : roads are shown by dotted lines : the town of Matera in black.)



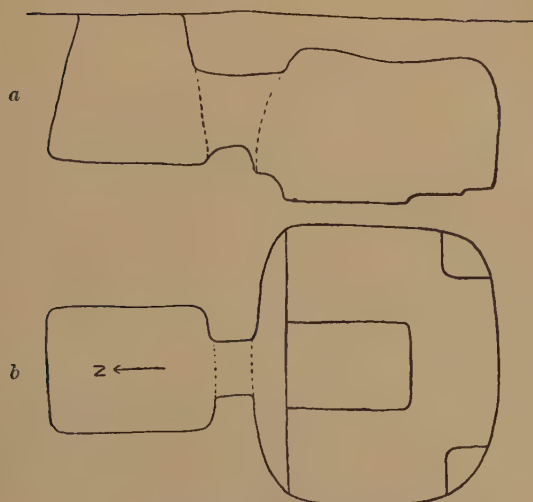


FIG. 1. MURGIA TIMONE: ROCK-CUT TOMB.  
Section (a) and Plan (b).



FIG. 2. MURGIA TIMONE: FIBULA FROM TOMB II.  
(about  $\frac{1}{2}$  scale.)



FIG. 3. MATERA: VASE OF  
AEGEAN TYPE.

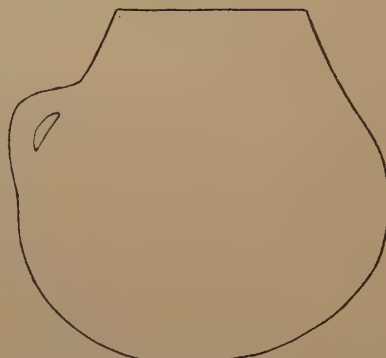


FIG. 4. SAN LORENZO: VASE OF 'DOLMEN-  
TYPE.'



FIG. 5. MURGIA TIMONE: STONE MOUND WITH CIST-GRAVE (*Cassetta*).



FIG. 6. MONTE TIMMARI:  
CREMATION-OSSUARY.



FIG. 9. TYPE b: POLISHED WARE INCISED AFTER FIRING.  
SHOWING INFLUENCE OF 'DOLMEN-WARE.'





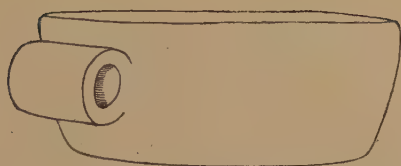


FIG. 10. TYPE *b*: BLACK UNDECORATED  
VARIETY: TARANTO.

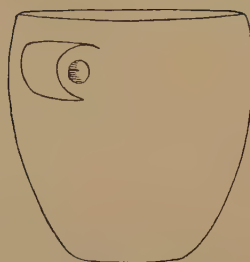


FIG. 11. TYPE *b*: TARANTO.

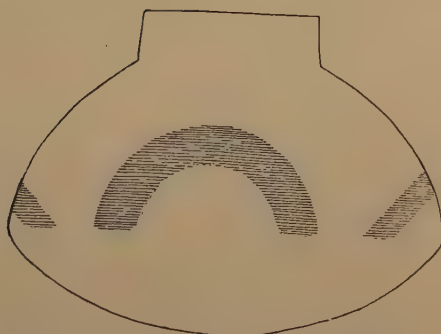


FIG. 12. TYPE *c*: PAINTED WARE.  
*'a fasce larghe.'*



FIG. 18. TYPE *f*: BRONZE AGE  
WARE: INCISED.



FIG. 20. TYPE *f*: BRONZE AGE WARE: TYPICAL  
DESIGNS (*about 1/2 scale*).



FIG. 19. TYPE *f*: BRONZE AGE WARE:  
INCISED.



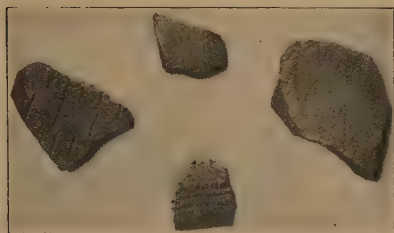


FIG. 7. TYPE *a*: GREY WARE, INCISED BEFORE FIRING.



FIG. 14. TYPE *d*: FINE PAINTED WARE.



FIG. 8. TYPE *b*: POLISHED WARE, INCISED AFTER FIRING.

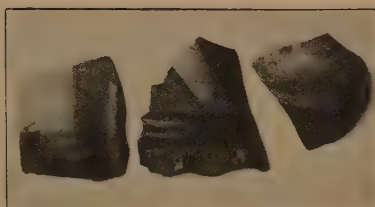


FIG. 15. TYPE *d*: PAINTED POTTERY: BALKAN TYPES.

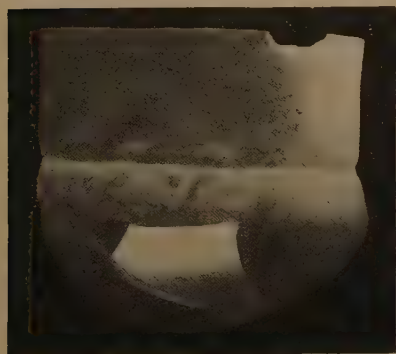


FIG. 18. TYPE *d*: FINE PAINTED WARE.

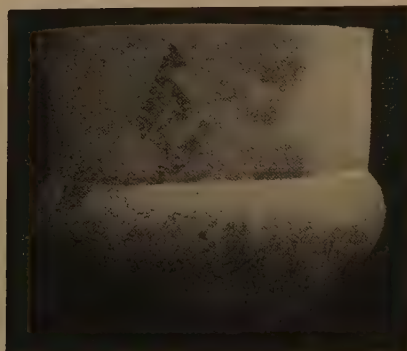


FIG. 17. TYPE *d*: FINE PAINTED WARE.





at no point are there more than a few inches of soil over the rock. The country is hilly, forming as it does the lowest slopes of the Apennines, but it must be premised that Matera is in no sense a mountain fastness. The modern town is built on the edge of a deep ravine, which in winter contains a torrent. Many of the houses are partly excavated in the rock, and have no more than a facade of stone. The steep rocky sides of the ravine are dotted with innumerable caves, many of which are still inhabited by shepherds. The largest and best known of these is the Grotta dei Pipistrelli, or Cave of the Bats, which lies some two miles up the Gravina from Matera.



SKETCH MAP OF SOUTH ITALY, SHOWING THE DISTRICT ROUND MATERA.

Before proceeding to describe the archaeological wonders of the ravine—locally called the Gravina—and its surrounding hills, we must say one word of the archaeologist to whom all our knowledge of the district is due. It is, I believe, over thirty years since Dr. Domenico Ridola, now representative of Matera in the National Parliament, began his researches in the Cave of the Bats. Since

that time the short periods of leisure which his vocation has given him have been devoted to the study of the prehistoric remains of his home, and with wonderful success. Strange to say, the importance of his discoveries has been fully realised by but few archaeologists. I can only account for this by the fact that very few have made a visit to Matera. To realise the prehistoric greatness of the place it is necessary to go there, to inspect the sites themselves and to examine the wonderful museum that Dr. Ridola has established and arranged in the town.

*Grotta dei Pipistrelli: Cave-dwellings and Burials*

Of Matera in the palaeolithic period we know nothing. Implements of *Chelléen* form are common at Venosa, a little further north, and I have myself seen a specimen picked up in the road just outside Matera. But at present we cannot even assert that the district was inhabited in palaeolithic times.

In the neolithic age, however, it is certain that the Gravina and its surrounding hills were the home of a race of men who possessed a fairly advanced civilisation and who enjoyed wide-reaching trade relations. The Cave of the Bats, already mentioned, is ample evidence of this.\* Under an overhanging slab of rock appears the mouth of a low dark passage through which it is impossible to walk upright. After some yards this passage, which runs parallel to the ravine, leads into a small cave which must originally have been completely shut in, but which is now open on the side of the ravine and, indeed, can be gained from thence without traversing the passage. Another even narrower passage leads from this cave into the Grotta dei Pipistrelli, which, like the smaller cave or ante-chamber, is now open on the side of the ravine. The cave consists of a long, wide and high chamber running perpendicularly into the rock face. At the back there was at one time a vertical shaft communicating with the open air above. This shaft is now choked up with earth and rock, but is still discernible in the field above. It was at one period in active use, for the proprietor of the field relates that once, when he had removed the soil down to the rock, he found a shallow foot-worn depression leading to the shaft. The cave was formed by water, and from its depths branch off numerous natural tunnels which penetrate far into the heart of the rock.

---

\* Ridola, *op. cit.*, p. 5; *Bull. Pal.* XXII, pp. 282 sqq.

The Grotta dei Pipistrelli has been used by many people and at many periods. The whole floor is covered with a deposit several metres thick. The part of this deposit which is of most interest is that which belongs to the neolithic period. This neolithic stratum is not thick, but is rich in remains. It contains animal bones, charcoal, flint and bone implements and potsherds. The flint implements are of the usual Italian neolithic types. Most are made from a rectangular long flake struck from a prepared core. Such a flake if unworked served as a knife; if pointed at one end by fine retouching on the edges it became a borer; while, rounded off at the ends by fine flaking on one face only, it was used as a scraper (*grattoir*). Besides these more usual types there were implements which recall the *Moustérien* forms, triangular points with very little working, and disc-shaped scrapers. Arrowheads were rare and primitive in form, while only one was finely worked with wings and tang. The implements of bone included small triangular arrow-points or borers, a polisher, and a rhomboidal arrowhead (?).

The pottery was of three types. Firstly, a grey pottery incised while still damp; secondly, an incised ware so far almost peculiar to Matera, the designs being produced by incision after the firing; thirdly, a type of fine painted ware with simple bands of colour on a yellow ground, known as '*a fasce larghe*.' As we shall return to consider these types of pottery later, I spare further description here.

While work was in progress in the Grotta dei Pipistrelli a small cleft was found in the side of the ravine a few metres below the entrance to the Grotta.\* Unfortunately this discovery was made during the illness of Dr. Ridola, and the place was virtually sacked by the workmen without any of the necessary notes being taken. It is, however, beyond all doubt that the cleft served as a burial place for the neolithic inhabitants of the great cave above. The entrance is just large enough to admit a man, and the cleft, which is only some five or six metres long, slopes slowly downwards until, at about a metre from the end, the floor takes a sudden drop and the cleft ends in a kind of small pit. The workmen relate that the pit was shut off by a wall of rough stones built across the cleft. Both in

---

\* *Bull. Pal.* XXII, p. 286; Brizio, *Epoca preistorica*, p. 24.



the pit and in the cleft leading to it were found numerous human bones, apparently in confusion; very few objects were found with them, but these included several discoid or rectangular pendants of blende.

No other cave in the Gravina has been systematically excavated, but it is highly probable that others besides the Grotta dei Pipistrelli were inhabited in neolithic times, and that a regular cave-village flourished there. The security of the place is enhanced by the existence in the Gravina of a remarkable natural reservoir of good water, the so-called Jurio, so large that even in the water famine of 1908 the Materans had enough and to spare.

### *Murgia Timone and other Intrenched Sites*

The stretch of country through which the Gravina runs consists of a series of low hills, most of which seem to present features of archaeological interest. Just as the rocky sides of the Gravina afforded a natural protection to cave-dwellers, so the slopes and summits of the hills offered themselves for the construction of fortified hut-villages. Three of the most important of these hills are the Murgia Timone, the Murgecchia and Serra d'Alto. (See Plate XVIII.)

On the two former no huts have as yet been found, but there is ample proof of their having existed. Near the summit of the Murgecchia has been found, and in part explored by Dr. Ridola, a kind of trench cut in the rock, roughly circular in form. It is not much more than a metre in depth, and so narrow that a man could comfortably leap across it. A short portion of the trench was dug out by Dr. Ridola and found to be filled with earth and rubbish of various kinds, including masses of sun-baked clay marked with the imprint of reeds, flint implements, charcoal and potsherds. These potsherds are of two of the types found in the Grotta dei Pipistrelli, viz., grey ware incised while still damp, and painted ware *a fasce larghe*. The masses of clay are without doubt the remains of wicker and clay huts. It follows that near the trench, presumably within it, lay a neolithic hut-village, whose remains were thrown into the trench probably when the site became re-inhabited at a later date.

But what was the purpose of the trench? Its narrowness seems

to argue against the hypothesis of a defence-work. At the same time it might have been supported on the inner side by a wall built with the stone extracted in cutting it, all trace of which has now disappeared. It is certainly difficult to see what other object save that of defence could have justified the cutting of so long a trench in solid rock. Moreover, outside this trench, at a constant distance of some ten metres from it, runs another circular trench of about the same size. This is now completely filled up, but it can be distinctly traced by the luxuriant belt of thistles which grows on it owing to the greater depth of earth. At the point, too, where Dr. Ridola excavated the inner trench there was a break in its continuity, and the two ends overlapped for a short distance. This suggests that here was the entrance to the village, for the overlapping wall would effectively prevent a direct attack on the gate, which, of course, would lie well within the overlap.

But unfortunately all this is mere guesswork. In order to determine the nature and purpose of the trenches not only must both be partly or wholly cleaned out, but the ground within them must also be examined.

On the Murgia Timone lies a very similar trench, of which an arc of about 100 metres has been exposed. It contained little save potsherds, some of which are certainly neolithic. We shall have to return to this point later.

#### *Serra d'Alto: Hut-foundations*

On Serra d'Alto actual hut-foundations have been found and explored by Dr. Ridola. They lie on the lowest slopes of the hill, near the road from Matera to Altamura. They are of a type usual in Italy, that is to say, they consist of circular holes dug in the earth. Over each hole a hut of wicker-work, or rushes, and clay was erected, and thus the hut was partly subterranean, its floor being below the level of the ground. The huts excavated varied in size, and many were remarkable for their depth. The material found in them is compared by Dr. Ridola with that yielded by the Grotta dei Pipistrelli, but the pottery also included several fragments of excellent painted ware. Quite a large quantity of this same ware was unearthed by peasants in what they described as a pit (*pozzo*) which they found while digging on the top of Serra d'Alto. Many

of the fragments which they brought into Matera fit together to form almost complete vases. It is urgent that the spot where the find was made be properly excavated, both in order to ascertain the nature of the pit and to recover further fragments of these exquisite vases.

So far we have been dealing with the neolithic period. To get some idea of the remains of the bronze age at Matera we must visit the Murgia Timone. It is not a long walk to the summit along a path strewn with Greek and Roman potsherds and bordered by caves inhabited in various periods. The summit is broad and forms a small plateau covered with low bush and stones, and, as elsewhere round Matera, the rock lies a few inches from the surface. It was on this plateau that some years ago Dr. Ridola detected a rock-cut trench similar to those on the Murgecchia. In attempting to clear out a portion of it he came upon two rough stone walls running across the bottom of the trench, from which he argued the presence of a tomb of some kind. Patroni, who was inspector of excavations in that district, then carried out extensive excavations on the spot, resulting in the discovery of rock-cut tombs of the bronze age. The results were published in *Monumenti Antichi*,\* and need only be given very shortly here.

Three tombs were found. Each consisted of a vertical shaft or pit cut down into the rock and opening off at the bottom into a rectangular chamber lying not beneath but at the side of the shaft, and completely subterranean. In Tomb I the shaft was rectangular in plan (Plate XIX, 1†), enlarging slightly as it descended. On the surface of the ground above the tomb lay a circle of large unworked stones. The diameter of the circle was about  $6\frac{1}{2}$  metres, and the shaft did not lie exactly at its centre. In the shaft were found twenty-two skeletons, and in the chamber itself at least fifty-four. In Tomb II the shaft was circular in plan, and there was a double circle of stones around it. The original chamber was rectangular in shape with a niche or recess in one side. But a second chamber of trapezoidal form was afterwards opened out from the bottom of the shaft at the side of the first. The contents of both chambers were found to be greatly disturbed, and the number of skeletons

---

\* Vol. VIII, pp. 440-510.

† After Patroni, *Mon. Ant.*, VIII.

could not be ascertained. The builders of Tomb III apparently lighted upon the rock-cut trench already described, for they cut the tomb-chamber in its inner side, and then devised a false shaft by running two rough walls across the bottom of the trench, one on each side of the entrance to the tomb. The chamber is rectangular, and is in part surrounded by a low bench or couch of stone left in the living rock. This feature also occurred in the other tombs.

The funeral furniture found in these graves includes small rings and bosses of bronze, beads of glass paste, and pottery of the kind described as Type *f* below. In the main the burials probably belong to the bronze age. The 'broken-backed' fibulae in Tomb III (Plate XIX, 2) cannot, however, be earlier than the iron age, and it is probable that this grave was reused in later times\* by the people who, as we shall shortly see, were accustomed to bury their dead under a simple mound of stones.

There is, moreover, evidence that this type of grave was in use at Matera even at an earlier period than the bronze age. Dr. Ridola, indeed, thinks that some of the burials even in the Murgia Timone tombs were secondary, i.e., that the people of the late bronze age found the tombs ready made and cast out the earlier burials. On this point we can hardly judge until he has published a fourth tomb, excavated by himself, and set forth the reasons which support his hypothesis.

But in the museum at Matera is the vase (Plate XIX, 3) which was published by Mayer in 1904.† It came from a simple rock tomb at Della Selva. The shaft of the tomb was cut vertically in a hill slope, and the chamber was a mere cavity in the side of the shaft. This type of tomb in itself looks early. The vase in question is of a form known in the neolithic period in Crete, and its decoration is of the type usual in the neolithic ware of Matera. But, fortunately, we can date by means of other vase fragments found in the tomb. These bear a decoration of incised bands, and are certainly of the type known at San Cono, Moarda and Villafrati, in Sicily, and also in Sardinia, and belonging to the late neolithic or very early metal age. This pottery is often referred to as pottery of the dolmen type,

---

\* See Jatta in *Bull. Pal.* XXX, p. 76.

† Mayer, *op. cit.*, figs. 90 and 91.



and one of its chief forms is the well-known bell-shaped cup (*Glockenbecher*).

Moreover, there are also in the museum two vases, like Plate XIX, 4,\* from rock-cut tombs at San Lorenzo near Matera. This form is known in the 'dolmen' pottery of Italy, a fine example occurring at Moarda.† One of the Materan vases, too, bears a zigzag ornament carried out in the hatched-band technique usual on this ware.

It seems, then, almost certain that the rock-cut tomb, at least in a simple form, was in use at Matera as early as the end of the neolithic period.

To return to the Murgia Timone. We have already mentioned the existence there of a circular trench. Patroni explains this as a road afterwards filled with refuse.‡ Several points, however, are clear with regard to it. In the first place it is older than the graves, for the stone circles round two of the graves lie directly over it. Moreover, the makers of Grave III evidently found the trench in existence, and used it to save the labour of digging a shaft for the grave. They reproduced the form of a shaft by running two walls close together across the trench and cut the chamber in the side of the trench. But there is still more definite evidence, for whoever will take the trouble to disturb the earth remaining in the trench will find potsherds of the usual neolithic type.§ In fact, the trench was of the same type, and no doubt served the same purpose as those on the Murgecchia.

#### *Murgia Timone: Mounds containing Cist-graves*

Having completed his work on the graves, Patroni examined one of the low mounds of stones with which the Murgia Timone is covered.|| In the centre of this he found a rough stone trough or cist (*cassetta*) consisting of four blocks set on edge (Plate XIX, 5). He pronounced the mound to be the foundation of a hut, and

---

\* Mayer, *op. cit.*, fig. 103.

† *Not. Scav.*, 1884, pp. 260 sqq.

‡ Patroni, *op. cit.*, pp. 429-440.

§ The material found in the trench by Patroni was all neolithic.

|| *Op. cit.*, 419-429.

conjectured that the trough served for the preparation and cooking of food. He therefore concluded that the numerous stone mounds on the Murgia were the remains of a prehistoric village, which he called the 'Siculan village at Matera,' a title which has caused confusion ever since. In reality the mounds are not hut-foundations at all, but graves belonging to the iron age, and the 'troughs' are simply cist-graves. This has been proved several times by the peasants of Matera, who have opened the mounds in the hunt for treasure and found the skeletons in position. The Murgecchia is covered with similar graves. Indeed, this burial under a mound of stones seems to have been widely used in Apulia during the iron age, for Jatta found and excavated a large number of such graves near Bari\* and in other parts of Apulia.

#### *Monte Timmari: Cremation Necropolis*

All the discoveries hitherto described were made previous to 1900, and it might have been expected that Matera, though it might give more finds of the same nature, could not possibly reserve any complete surprises. However, in that year there came to light a cremation necropolis on the summit of Monte Timmari.† The method of burial in this cemetery was as follows. The burnt bones were placed, usually without any funeral furniture, in earthenware ossuaries, generally of biconical form, covered with an inverted bowl (Plate XIX, 6). The ossuaries were then buried in the earth not far below the surface, packed closely in rows. They belong to a type of pottery which is known in the *terremare* of North Italy and of Taranto in South Italy. The significance of this we shall see shortly.

#### *The Pottery*

In attempting to estimate the relation of the early settlements at Matera to those of other places in Italy and outside, we have one excellent guide—the magnificent pottery series. The pottery found in the various stations may be classed under seven heads:—

---

\* *Bull. Pal.* XXX, pp. 32, sqq.

† *Monumenti Antichi*, XVI, pp. 1-166.

- (a) Grey ware incised before firing.
- (b) Fine polished ware, usually incised after firing.
- (c) Painted ware '*a fasce larghe*.'
- (d) Fine painted ware.
- (e) Dolmen ware (Moarda-Villafrati ware).
- (f) Bronze age incised ware (Pertosa ware).
- (g) Timmari ware.

A few variations of these types will be noticed in passing.

*Type (a).* The clay is grey throughout; there seems to be no slip and very little attempt at a polish. The incisions, made while the clay was still wet, do not form any definite pattern but usually cover the whole vase. They were made with blunt points of various sizes, and include dashes, wavy lines, triangular marks, crescents, &c.

Fortunately we have an exact parallel to this ware in South Italy. A short distance from Molfetta, on the Adriatic coast, lies a remarkable depression in the ground with steep rocky sides containing several caves. This depression is known as the Pulo. The excavations of Mayer in 1900 revealed two prehistoric settlements there. The earlier consisted of a hut-village built above the Pulo on its brink. The later lay in the Pulo itself and in its caves. The pottery of the hut-village was almost entirely ware of *Type (a)*\* (Plate XXI, 7.) It seems, therefore, probable that at Matera and at the Pulo we have in the neolithic period precisely the same culture and the same people.

*Type (b).* The clay varies in colour from grey to red, and the firing is variable. Over the surface is laid, unevenly, a thick slip varying in colour from red-brown to black-brown. All the vases have a fine polish. Occasionally there is no ornament. More usually the decoration consists of incisions made probably after the firing, generally with a fairly sharp point, perhaps a flint. I am inclined to divide the ornament up into two types, in one of which zigzags, dog-tooth and chessboard patterns are arranged horizontally round the vase (Plate XXI, 8), while in the other the hatched band forms the unit of design (Plate XIX, 9). The second type might well be

---

\* Mayer, *op. cit.*, pp. 44-61.

due to the influence of 'dolmen' ware, which seems to have entered Italy at the end of the neolithic period: see under Type (e).

This incised and polished pottery is found at Matera in conjunction with Type (a), and we have as yet no evidence for thinking either to be earlier than the other. It is curious that though Type (a) is so common at the Pulo of Molfetta, Type (b) is quite unknown there. If the two are really contemporary at Matera, as seems probable, we have here a remarkable example of local variation.

Taking Types (a) and (b) as a whole, can we find any parallels further afield? I have already tried to give reasons for believing that Type (a) is closely allied to the earliest neolithic pottery of Sicily,\* as seen at Stentinello and Matrensa, and that this ware, unknown in North Italy, was of southern origin, being closely related to that of Crete, occurring in various parts of South Italy and reaching Sardinia and Liguria. Type (b) seems to confirm the idea of a Cretan or at least Aegean connection. In technique it closely resembles the neolithic ware of Knossos, and there is some similarity in the designs.

Among the undecorated vases of Type (b) must be classed, though their colour is black instead of the usual brown, two very important vases. One is a kind of shallow saucepan with horizontal tubular handle. It is said to have been found in a hut-foundation together with a skeleton. This type of vase occurs in the neolithic burials examined by Quagliati near the *terramara* at Taranto† (Plate XX, 10). The second vase comes from the Grotta dei Pipistrelli. This form occurs, like the last, in the Taranto burials (Plate XX, 11), and in the Syracuse museum there is a specimen marked as coming from Paternò. Thus the forms of the Materan vases, as well as their ornament, help us to bind South Italy and Sicily into a single culture-circle in the neolithic period and to cut this district sharply off from North Italy.

*Type (c).* This ware is made of very pure clay of a pinky ochre colour. The walls are often remarkably thin, and the forms good,

---

\* *Annual of the British School at Athens*, XIII, pp. 405 sqq.; see also Mayer, *op. cit.*, p. 126, and *Bull. Pal.* XXII, pp. 282-3.

† *Bull. Pal.* XXXII, pp. 17 sqq.; whence figs. 10, 11 are reproduced.



though I doubt whether the wheel was used. The ornament consists of broad bands of brown or reddish paint, usually running horizontally round the vase, rarely taking other forms as in Plate XX, 12. There is a slight polish.

This pottery is at present a mystery. It is unknown elsewhere except at the Pulo, where it was in use probably in the upper station. Can it be of local make? That the Materans made some attempt at pottery painting is proved by a few vases from the Grotta dei Pipistrelli. One of these is of Type (b). The outside has the usual slip all over, but inside the bowl is rough except for two cross bands painted on *with the slip-material*. This is the beginning of painting. Another vase shows a further advance. It is a bowl, covered outside with a brown slip, as in Type (b). Inside is a good ochre slip with a zigzag pattern in brown. In both these cases the outside of the vase is in the usual local technique, and the painters were therefore local potters.

Thus we must not judge the Materans incapable of painting pottery. Nevertheless, I doubt very much whether they themselves made these vases '*a fasce larghe*' (Type (c)), partly because the clay is so utterly different from that used by them in general, and partly because we have so few signs of a real advance in the art of pottery painting at Matera. In any case, the question cannot be definitely decided in the light of present evidence.

It has been suggested that this pottery is Mycenaean.\* At first sight it presents certain similarities to the poorest and latest Mycenaean ware. The clays used are almost identical, and there is some resemblance in the way in which the paint is applied. But there are wide differences. In the first place the Materan vases seem to be hand-made,† in the second place there is never any Mycenaean scheme of design, and in the third place the forms are not Mycenaean (cf., for example, Plate XX, 12). Moreover, if this ware was really found in the neolithic stratum at Matera—and there seems no reason to doubt it—there are insuperable chronological

---

\* Mayer, who is very obscure in his treatment of all this painted pottery, distinctly states that the Molfettan and Materan fragments of this ware are all Mycenaean, pp. 145 and 184. He also classes as Mycenaean certain Molfettan fragments of quite a different kind, p. 141, none of which appear to me to be Mycenaean at all.

† Mayer, p. 164, states that at Molfetta this pottery is always wheel-made. I have examined dozens of specimens at Matera and can find no certain proof of the use of the wheel.

objections to the proposed identification, for in a stratum *overlying the late bronze age terramara* at Taranto occurs Mycenaean pottery of an earlier and less debased type than that which our Materan ware resembles. At Molfetta this pottery was common in the earlier settlement, which cannot possibly have survived even the *early bronze age*.

*Type (d)* If Type (c) is not a local fabric, much less is Type (d). The clay is perfectly pure and covered with a slip of a grey or buff colour. The shapes are good, though probably hand-made. The ornament is carried out in brown (Plate XXI, 13, 17). The designs, often very freely conceived, are mainly formed by combinations of straight lines, though in some cases the right and the curved line are admirably blended (Plate XXI, 14).<sup>\*</sup> The scheme is usually fitted so as to run horizontally round the upper part of the vase. Figure 16 gives some of the most important designs. The spiral and the maeander are both used in various forms. But the most remarkable fact is the curious use of the triangle. It seems to be fitted in at every possible turn, often without any visible relation to the design; see especially *b*, in the centre of the figure.

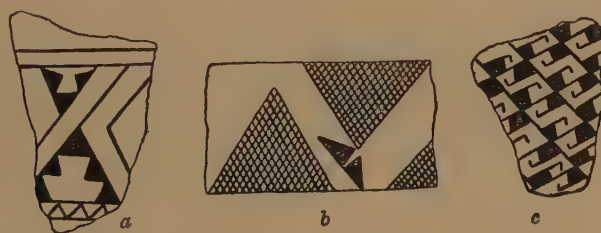


FIG. 16. SERRA D' ALTO: FINE PAINTED WARE. TYPICAL DESIGNS.

All the Matera fragments belong without doubt to a single fabric, and, moreover, they all come either from the top of Serra d'Alto or from the huts on its lower slopes. If this fabric was not local, from whence did it come? Now there are a few specimens of the same pottery from the Pulo at Molfetta, where it was found mixed with painted ware of different types (Plate XXI, 15). These latter very closely resemble some of the known Balkan wares, notably those of

<sup>\*</sup> See Mayer, *op. cit.*, figs. 114, and 117-119.

Thiessaly\* (Sesklo and Dhimini) and Boeotia (Chaeronea);† in fact, I suggested two years ago that pottery was actually imported into Apulia from across the Adriatic.

Now it is true that the Materan ware is of a type which has no exact parallel in the Balkans. But there is a probability that it came from somewhere in the same region as the other pottery with which it was found at the Pulo. This is to some extent borne out by its ornament, which bears not the remotest resemblance to that of any known Sicilian, Aegaeon or Cretan ware, but does resemble to some extent that of several of the fabrics of the North and South Balkans. The clever combination of straight and curved is a feature of several Balkan wares, notably those of Sesklo and Dhimini‡ and of the Bulgarian *tells*.§ On the other hand, the spiral pattern (Plate XXI, 13), with its mixture of thin and thick line and its triangles filling the corners, is closely reminiscent of the wares of Podolia and Bessarabia in Russia.||

In conclusion, we cannot fix the provenance of this ware. We can only assert that it was almost certainly imported into Italy, and that it may have come from somewhere across the Adriatic. It seems to show that even in the neolithic period the south-eastern corner of Italy had already established trade relations with countries across the sea, and it is quite possible that near Molfetta lay the port or one of the ports through which the imports entered Italy.

*Type (e).* Here we return to a kind of pottery which, though it raises problems, is not altogether a mystery. As stated above, these vases belong to the ware generally known in Italy as dolmen pottery, from its occurrence in the dolmens and other megalithic monuments of Europe. This ware seems to have overspread almost the whole of Italy at the end of the neolithic period. The Sicilian examples—from San Cono,¶ Moarda and Villafrati—are probably

\* Tsountas, *Αἱ προϊστορικαὶ ἀκροπόλεις Διμηνίου καὶ Σέσκλου*.

† *Athenische Mittheilungen*, 1905, pp. 120 sqq.; 1906, pp. 396 sqq.; *Ἐφημερίς Ἀρχαιολογική*, 1908, pp. 63 sqq.

‡ Cf. Tsountas, *op. cit.*, Plates XX-XXX.

§ *Bulletin de Correspondances Helléniques*, 1906, p. 402, fig. 37.

|| Von Stern, *Prämykenische Kultur in Südrussland*.

¶ *Bull. Pal.* XXV, Pl. VI, figs. 1-6.

neolithic, while those from Sardinia (San Bartolomeo cavern and Anghelu Ruju\*) and the Italian mainland (Ca' di Marco, Santa Cristina† and Grotta all' Onda)‡ belong generally to the eneolithic or copper age. The Materan examples are probably to be ascribed to this latter period.

What was the nature of the influence which caused the appearance of this ware in Italy? Was it the peculiar inheritance of the builders of the megalithic monuments, supposing these to have been a single people? Did such a people invade Italy and its islands, building the megalithic monuments of Sardinia and of Terra d' Otranto, not far from Matera itself?§ Or did the knowledge of this style of pottery reach Italy by trade?

Unfortunately, none of these questions can be answered. The whole problem of the megalithic monuments remains still unsolved, and until this is decided we can hope for little light on the more special aspect of the question which concerns Italy. One step, however, could be taken, and it is to be hoped that before long a rigorous examination of the Terra d' Otranto dolmens will be made, with a view to discovering—if plundering has not destroyed all the evidence—what culture was possessed by the builders of these monuments.

*Type (f)* brings us to the bronze age (Plate XX, 18, 19). This pottery is not uncommon in South Italy, and is best known from the examples found in the Grotta della Pertosa near Salerno.|| It includes both forms and ornament which are peculiar to it. The clay is rather rough and usually has a smoky black surface, occasionally polished. On this are incised designs, the most remarkable of which are the spiral and the maeander (Plate XX, 20). The incisions are sometimes filled with a white inlay. As a rule this ware belongs to the full bronze age, though some of the specimens from the Vibrata valley may belong to an early date in that age. All the evidence is against any attempt to connect this ware directly with the neolithic incised wares

---

\* *Not. Scav.*, 1904, pp. 301 ff.

† *Bull. Pal.* XXV, Pl. III, fig. 5.

‡ *Bull. Pal.* XXVI, Pl. V, fig. 1, and Pl. VII, fig. 1b.

§ *Bull. Pal.* XXV, pp. 178 sqq.

|| *Monumenti Antichi*, Vol. IX, pp. 564 sqq.; figs. 10-50.



of South Italy, Sicily and Crete, in which the two most conspicuous patterns, the spiral and the maeander, are absent. If we must seek for foreign influence at all in this pottery, (and it is probable that we must), it is natural to turn to the Balkan peninsula, where both patterns were widely known in neolithic times. And more than this; in Bosnia and Servia, for example at Butmir\* and Vinča,† occurs pottery which is very similar to that of South Italy both in design and technique. The spiral and maeander are the main elements of the decorative system, and the incisions are in some cases filled with a white inlay.

*Type (g)*, the ware of Timmari, is not difficult to place.‡ It belongs in technique to the pottery of the *terremare*, and its forms are similar to those of the pottery of Bismantova and Fontanella in North Italy. Now these last sites are cemeteries of the period of transition from the bronze to the iron age, and show the folk of the *terremare* at a date when they had already abandoned or begun to abandon their pile-villages. The necropolis of Timmari stands to the *terramara* at Taranto in the same relation that those of Bismantova and Fontanella stand to the *terremare* of the Po Valley.§ We know that towards the end of the bronze age a body of *terremare*-folk left their homes in North Italy and settled at Taranto. The Timmari cemetery shows us these immigrants at the moment of transition to the iron age.

#### *General Conclusions*

These, then, are the types of pottery which Matera has yielded. From them we can sketch, though not very definitely, the history of the district in primitive times. In neolithic days the caves of the Gravina and the hill-tops around it afforded security to a race of men who enjoyed a comparatively advanced civilisation. This civilisation differed considerably from that which existed at the same period in North Italy, and in some respects was more closely allied to those of Crete, the Aegaeon and Sicily. The three points

---

\* Radimsky and Hoernes, *Die neolithische Station von Butmir*.

† Material now in the Museum at Sarajevo.

‡ *Mon. Ant.* XVI, pp. 40 sqq., figs. 24-90.

§ See Pigorini in *Bull. Pal.* XXVII, p. 22.

in South Italy where we can study it are Matera, Taranto and the Pulo at Molfetta. But not only was this a high civilisation; it was also in contact with others beyond the sea. At some point in Apulia, probably near Molfetta, painted vases were imported from across the Adriatic which the Italians strove to imitate almost in vain. From Molfetta they were passed on by land to Matera, which was perhaps the great centre of this civilisation.

Towards the end of the neolithic period, Matera fell under an influence which affected the whole of Italy and its islands. Whether a new people invaded Sardinia, Sicily and the south-east corner of Italy, and built the megalithic monuments there found, we cannot say, but it is certain that at Matera types of pottery came into use which are usually associated with such monuments in Europe. In the full bronze age, the civilisation of Matera is to some extent in line with that of the rest of South Italy, to judge from the presence of the incised spiral-and-maeander pottery. Towards the end of the bronze period we see the arrival of a body of invading *terremare*-folk from North Italy. What the relations of these people with the old inhabitants were is not certain, but the finding of incised spiral-and-maeander ware in the *terramara* at Taranto, and the existence of a cemetery of the new-comers so near Matera, points to toleration if not friendliness. In the iron age Matera is again in line with Apulia. The burial rite is now inhumation under a mound of stones, from which we may infer that the cremating folk of the *terremare* had exercised on the Materans no influence strong enough to lead to a change in burial custom.

Such are the early antiquities of Matera. They extend almost unbroken from the neolithic age to the Greek period. Surely they deserve far more attention than they have hitherto received. They are, in the main, unique. For one who has not studied the contents of the Ridola Museum it is quite impossible to have any proper conception of the neolithic period in South Italy, and it is only after such a study that one realises how completely the history of South Italy in this early period differed from that of the North. Moreover, no spot in Italy offers such an opportunity as Matera for the reconstruction of lost history. Every period seems to be represented, and it is probable that by means of further systematic excavation we might gain really definite knowledge as to the

succession of peoples and development of civilisation in South Italy. But the work must be undertaken at once, for much of the land is under cultivation, and every time that a grave is cut into by the spade or plough, and its contents carried off by peasants, a valuable piece of evidence is lost.

Side by side with this work would go the maintenance of a museum at Matera itself, in which the prehistoric antiquities of the district could be studied. Fortunately, this would not be a difficult task, for the Ridola Museum already contains a collection which is unique. If this material could be set out in rooms sufficiently large for its accommodation, it would, as a local collection, be without parallel. If, on the other hand, it were decided to transfer it to some larger museum in Italy, two-thirds of its value would be lost; for even supposing that space could be found for the whole of it, it would have to be broken up and divided among various rooms in such a way that the historical perspective and the local significance would be lost. He who realises the importance of Matera in the study of prehistoric Italy will certainly not grudge the journey thither, long though it be. On the other hand, it seems nothing short of absurd that what is, or at least will be, the most important prehistoric site in South Italy should have to part with its finds to museums which are incapable of giving them the accommodation necessary for their proper arrangement.

I take this opportunity of thanking Dr. Ridola for his great kindness to me during the few days which I spent as his guest at Matera, and also for his generous permission to illustrate and describe material excavated by himself and not previously published. The descriptions here given of the sites, and of the discoveries made there, are based entirely on personal observation made on the spot in Dr. Ridola's company. All cases of doubt were settled by references to the full notes which he has kept throughout.

## HUMAN SKULLS FROM ASIA MINOR

BY PROFESSOR A. M. PATERSON, M.D. AND DR. W. H. BROAD

[These skulls were found in the course of recent operations in the ancient mercury-mines at Sisma, in Asia Minor. Sisma lies in the hills above Laodicea Katakekaumenè, (*Yorghana Ladik*) about twenty miles north and a little west of Iconium. Messrs. J. W. Whittall & Co., of Constantinople, who are now working these mines, have been guided in their operations by the traces of ancient working; and in one such ancient cutting the skeletons of nearly fifty entombed miners were found.

In the same cutting with these human remains were found stone hammers of diabase, and flint arrow-heads and spear-heads. These are now in the possession of the Director of the Ottoman Railway. Just outside the cutting, in a hole in the rock, was a copper basin containing iron things like nails.

The date at which the disaster occurred is quite uncertain. The mines at Sisma were in use at many periods; but always, apparently, for the production of cinnabar as a pigment; at all events there are no traces of any mercury-smelting.

Nor is it easy to indicate any probability as to the race of these workmen. Ancient miners, at all events in large establishments like that at Sisma, were almost invariably slaves, and consequently may have been brought together from different and distant places. The modern workmen in these mines, in the same way, include Turks, Armenians and Greeks, with English and Italian overseers.

The material now to be described consists of four skulls selected from the shattered remains by Mr. W. M. Calder, Craven Travelling Fellow of the University of Oxford, who visited the spot not long after the discovery, and sent them to the Liverpool University Institute of Archaeology, with the consent and active help of Messrs. Whittall & Co., to whom as well as to Mr. Calder, the Institute tenders its hearty thanks. The skulls are now deposited in the Department of Human Anatomy in the University of Liverpool. With the human skulls was sent also part of the calvarium of one of the *Canidae*, identified as 'probably a wolf' by Dr. Clubb of the Liverpool Free Public Museums.—J. L. M.]



*Report on the Skulls*

All the skulls except No. 1, exhibit on their exposed surfaces a grey shining appearance, indicating a change in the character of the bones, probably due to the action of mercurial salts in the earth.

SKULL No. 1 is very imperfect. The cranium alone is present, and of this the right side and base are partially destroyed. It is platyrrhine, microseme, and brachycephalic (81.1). The posterior part of the cranium is very wide. The left temporal ridge is well marked, and the middle meningeal artery occupied a canal in the parietal bone. The teeth remaining in position are the canine and first premolar on the right, and the first premolar, and first and second molars on the left side. The wisdom teeth are lost. All the teeth are much worn and have flattened crowns. The sagittal, coronal and lamboidal sutures are obliterated, leading to the conclusion that the skull was that of an elderly person, probably male.

SKULL No. 2 is that of a child about twelve to fourteen years of age. It is markedly dolichocephalic (69); its estimated capacity is 1309 c.c. ; the vertical height is small ; it is orthognathous, microseme, and leptorrhine. Of the teeth, those present erupted are the two molars on the right, and the first praemolar and both molars on the left side. The sockets for the other teeth are present. A supernumerary incisor tooth is present, unerupted, on the left side ; and both wisdom teeth are present, imbedded in the jaw. There is no lower jaw.

SKULL No. 3 is that of an adult male. It is very incomplete, consisting of the frontal and facial portions only. The cranium is extremely thick (10 mm.). It is platyrrhine, and microseme: the interorbital width is excessive. There are no teeth, though the sockets for the full complement are present.

SKULL No. 4 is that of an adult male ; the sutures are still distinct. It is incomplete, lacking the occipital and basal portions, and the left side of the face. The frontal curve is massive and well shaped. The orbits are megaseme, the interorbital width is excessive, and the cranium is very thick. There are sockets for the full complement of teeth, but only the second right molar tooth is present.

Number	1	2	3	4
Age - - - - -	aged	young	aged	adult
Sex - - - - -	male	male?	male	male
Cubic Capacity (estimated) - - -	—	1309	—	—
Glabello-occipital length - - -	180	184	—	—
Ophryo-occipital length - - -	177	182	—	—
Naso-occipital length - - -	179	182	—	—
Basi-bregmatic height - - -	—	127	141?	—
VERTICAL INDEX - - -	—	69	—	—
Minimum Frontal Diameter - - -	100	90	104	—
Stephanic Diameter - - -	112	107	119?	118
Asterionic Diameter - - -	—	97	—	—
Greatest Breadth - - -	146	127	—	—
CEPHALIC INDEX - - -	81.1	69	—	—
Horizontal Circumference - - -	—	495	—	—
Frontal-Longitudinal Arc - - -	134	125	130?	132
Parietal " " - - -	118	115	—	—
Occipital " " - - -	—	123	—	—
Total " " - - -	—	363	—	—
Vertical Transverse " " - - -	—	288	—	—
Length of Foramen Magnum - - -	—	35	—	—
Basi-nasal length - - -	—	101	100	—
Basi-alveolar length - - -	—	94	94	—
GNATHIC or ALVEOLAR INDEX - - -	—	93	—	—
Inter-zygomatic breadth - - -	—	—	—	—
STEPHANO-ZYGOMATIC INDEX - - -	—	—	—	—
Intermalar breadth - - -	—	99	103	—
Ophryo-alveolar length - - -	84	79	81	84
Naso-alveolar - - -	64	60	68	63
FACIAL INDEX - - -	—	—	—	—
Nasal Height - - -	43	46	46	47
Nasal Width - - -	26	23	26	—
NASAL INDEX - - -	60.4	50	56	—
Orbital Width - - -	41	38	39	43
Orbital Height - - -	35	37	33	32
ORBITAL INDEX - - -	85.3	84.2	84.6	74.4
Bidacryal Width - - -	22	20	29	27
Palato-Maxillary length - - -	55	50	54	59
Palato-Maxillary breadth - - -	58	58	60	—
PALATO-MAXILLARY INDEX - - -	105	116	—	—
Length of Molars & Premolars - - -	—	36	40	43
DENTAL INDEX - - -	—	35.6	40	—

## OBITUARY

F. G. HILTON PRICE, DIR. S.A.

VICE-PRESIDENT OF THE LIVERPOOL UNIVERSITY INSTITUTE OF  
ARCHAEOLOGY.

WITH PLATE XIV

Mr. Frederick George Hilton Price, Banker and Antiquary, died at Cannes on the 14th March, 1909. He was born on August 20th, 1842, and educated at Crawford College, Maidenhead. He married in 1867, Christina, daughter of Mr. William Bailey, of Oaken, Staffordshire, and had issue one son and one daughter. At the time of his death he was head acting partner of Child's Bank, a firm which he entered in 1860.

Mr. Price was one of the earliest members of the Bankers' Institute, of which he subsequently became a member of the Council. He published in 1876 *A Handbook of London Bankers*, and *Early Goldsmiths and Bankers*, works which contain much interesting and useful information. He also gathered together all the old documents connected with the history of Child's Bank, and these formed the basis of *Ye Marygold*, the title of which was taken from the ancient sign of his firm near Temple Bar. His interest in old London was keen. His essay on *The Signs of Old Lombard Street* was the means of reviving to a large extent many of the old signs that had been disappearing outside the houses in the city. *Signs of Old Fleet Street*, *Signs of Old Houses in the Strand*, *The Signs of the Pawnbrokers in London in the 17th and 18th centuries* are amongst others of the delightful short papers which he wrote from time to time on that subject. He gathered as much information as possible wherever excavations were in progress in likely



FREDERICK GEORGE HILTON PRICE.

*Vice-President of the Liverpool University Institute of Archaeology.*

*20 August, 1842—14 March, 1900.*





places in the city; and in this way got together a considerable collection of relics of Mediaeval and even Roman London. His interest in this way widened, and led him to examine the sites of several so called 'Roman Camps': e.g. *Camps on the Malvern Hills* (Jour. Anthr. Inst., Feb. 1881), *The Roman Villa at Moreton* (jointly with J. E. Price), and other monographs. His most recent treatise was on *Old Base Metal Spoons*, a subject upon which he was a connoisseur.

Mr. Price seems to have begun his more general studies as a geologist, particularly in regard to the cretacious rocks. His paper *On the Gault of Folkestone* (Quarterly Journal of the Geological Society, XXX, p. 343, 1874) is still the standard work on the subject. Other papers were *On a new species of Rostellaria from the Annelid bed in the Gault of Kent* (1876), and *On the beds between the Gault and the Upper Chalk near Folkestone* (Quarterly Journal of the Geological Society, XXXIII, p. 431). The latter has not yet been superseded as an authoritative account of the grand coast section from Folkestone to Dover, and it is from this paper that we get the now familiar terms 'Cast-Bed' and 'Grit-Bed.'

Mr. Price's interest then seemed to have taken a definite archaeological bent. He became interested particularly in Egyptian Antiquities, and before his death made one of the largest private collections of certain valuable kinds of objects. Of these he published an illustrated catalogue on a generous scale, in two volumes. He also gave the greatest encouragement to the progress of all Egyptian research, and was treasurer of most of the English Funds devoted to that purpose. At the time of his death he was President of the Committee of the Egypt Exploration Fund. He had been for a number of years Director of the Society of Antiquaries; he was also Vice-President and past President of the Society of Biblical Archaeology. He was a Fellow of the Geological, Zoological, and Numismatical Societies; a member of the Athenaeum and of the Burlington Fine Arts Club; and Vice-President of the Liverpool University Institute of Archaeology from its foundation. He was also the founder, ten years ago, of the small body which subsequently became the Egyptian Excavations Committee of this Institute, and was Treasurer of that Committee from the beginning.

To the performance of these many voluntary duties he brought a charm of manner, geniality of disposition, and simplicity of nature, that warmed all hearts to him. Combining his knowledge and enthusiasm for archaeology with his experience of affairs and of men, he was an esteemed and valuable colleague on Committees and public bodies; and to many, individually, a friend whose ideals of loyalty and kindness were high and deep-rooted, remaining unshaken by the buffetting of things which pass. His place will be a long time vacant.

J. G.

## DEA FEBRIS: A STUDY OF MALARIA IN ANCIENT ITALY

BY W. H. S. JONES, M.A.

FELLOW OF ST. CATHARINE'S COLLEGE, CAMBRIDGE

*'Non est vivere sed valere vita.'*—MARTIAL.

Into this essay I have tried to condense the results of more than two years' research.

It would have been considerably increased in bulk if I had quoted in full the hundreds of references which I have collected from the Latin writers. But the greater part of these prove nothing except that malaria was common in the ancient world, and I think that the selection I have made is sufficient for my purpose. I may, perhaps, be permitted to refer to my *Malaria and Greek History* (Manchester, 1909), in which I discuss fully the consequences and predisposing causes of endemic malaria.

My object in writing is to show that:—

(1) The discovery of Major Ross renders it unnecessary to infer, from the marshy state of Italy, that the country was fever-stricken in early times. In this way is removed a stumbling-block which has been a great trouble to previous enquirers.

(2) Malaria exercised a powerful (though to a great extent uncertain) influence upon Roman history and Roman life. This influence is not less important because it is necessarily incapable of exact measurement.

I have to thank several friends for much kind and generous help. These include Major R. Ross, Professor Sir T. Clifford Allbutt, Professor A. Celli, Dr. F. Genovese, Mr. W. Warde Fowler and Mr. T. Spencer Jerome.



*Dea Febris*

Cicero tells us that on the Palatine hill there was a shrine and an altar dedicated to the goddess Fever.\* Like the Christian writers of a later date, he condemned as immoral this worship of a malignant deity, but, although rejected by educated men, the cult was undoubtedly popular with the lower orders. Pliny states that it had State recognition,† while Valerius Maximus mentions two other *templa* besides the one on the Palatine.‡

Now there can be no doubt about the nature of the disease thus deified by the Romans; although *febris* may be used to denote any feverishness, as a rule it means malaria. This will become plain as the enquiry proceeds; for the present it is sufficient to point out that the medical writer Celsus nearly always means malaria when he refers to 'fever.'

The deification of fever is a clear proof that it played no small part in the lives of the Romans, and, more than all other fevers, malaria has serious consequences, both economic and other.§ It is a disease which fastens upon such districts as, from their marshy nature, are capable of breeding the Anopheline mosquito. This insect, which thrives best where there are small puddles of water on the ground, e.g., along the banks of streams or on the edges of

\*CICERO, *de legibus*, II, 11: 'araque vetusta in Palatio Febris et altera Esquilis Malae Fortunae detestataque omnia eius modi repudianda sunt': *de natura deorum*, III, 25; 'Febris enim fanum in Palatio . . . et aram Malae Fortunae Esquilis consecratam videmus.' The references to 'Dea Febris' are given and discussed in WISSOWA, *Religion und Kultus der Römer*, p. 197, and the articles *Febris* in ROSCHER's *Lexikon* and DAREMBERG-SAGLIO.

†PLINY, *H.N.*, II, 7, §16: 'ideoque etiam publice Febri fanum in Palatio dicatum est.'

‡VALERIUS MAXIMUS, II, 5, 6: 'et ceteros quidem ad benefaciendum venerabantur; Febrim autem ad minus nocendum templis colebant, quorum adhuc unum in Palatio, alterum in area Marianorum monumentorum, tertium in summa parte Vici Longi exstat.'

§Malarial fever is either *intermittent* (ceasing altogether on certain days or hours) or remittent (partially ceasing on certain days or hours). So we may have (a) quartan fevers, (b) tertian fevers, (c) quotidian fevers. Quinine kills the parasite, but long-continued malaria results in anaemia, enlargement of the spleen and dropsy. It is not a very fatal disease, but it produces a great amount of ill-health, particularly complaints of the digestive system. In sub-tropical countries the malarial season lasts during the summer and autumn, when streams and pools partially dry up and the sun hatches out the Anophelines.

The best means of recognising in ancient literature allusions to malaria are:—

- (1) Periodicity or swollen spleen;
- (2) Prevalence in autumn, or near marshy land;
- (3) Danger of evening air;
- (4) Unhealthiness of districts;
- (5) Contagion proves that a disease is *not* malarial.

Of course these cannot be considered certain tests, but they are nevertheless fairly accurate.

marshes and lakes, carries the malarial parasite from man to man. Whole regions may thus be poisoned, and in the worst places every inhabitant may suffer from the disease every year. Moreover, it takes many years before a person becomes immune to the parasite, and even then the immunity is far from complete. If a child be infected from birth onwards, he begins to suffer less after puberty, but perfect immunity is very rare indeed. Malaria, then, is a fever marked by its permanent infection of certain districts, by the large number of its victims and by its liability to recur, either through fresh infection or when strain or chill revives the parasites latent in the blood.

The presence of malaria is an important factor in the environment of a people. Consciously or unconsciously efforts are made to avoid fever, or the fatigue which so often precipitates an attack. If a place be very unhealthy, emigration goes on until there is left only a residue of those who, through poverty or inertia, remain behind to sink into physical and moral degradation. In other cases, when the risk of fever is not so great, or the malarious region is attractive in other respects, the inhabitants modify their ways of life so as to avoid the danger as far as they can. These two consequences of malaria, the desertion of certain districts and the development of habits tending to diminish the chances of falling ill, will form the main part of the present enquiry. It is my object to show how far the presence of malaria accounts for the history, the character, and the habits of the Roman people.

Has Italy always suffered from this plague? Many writers—Brocchi, de Tournon, Dureau de la Malle, North, and others—point out that some districts, such as a great part of Etruria and Latium, which are now scarcely habitable, were at one time the homes of great and prosperous peoples. To such enquirers the flourishing condition of Tarquinii, Veii, Falerii, Fidenae, Gabii and Ardea is a perplexing puzzle, the solution of which is hard to find. Brocchi thinks that the Roman national dress, the toga, preserved the early inhabitants from chill, which certainly predisposes to malarial relapses; Dureau de la Malle is of opinion that the use of oil to anoint the body, fumigations, fires, and the habit of changing their place of abode according to the season or time of day, saved the early Romans from the worst effects of marsh fever. It has also

been noticed how often Italian towns were built high on the hills, and so were less accessible to the Anopheline mosquito, which cannot fly far from the marshes where it is hatched.

Brocchi holds that malaria increased as the use of wool gave way to that of silk and other flimsier fabrics, while most writers on the subject blame the decay of agriculture, which allowed the land to become more marshy.

In these arguments there is much sound reasoning, but one fact is left entirely unexplained. If malaria was prevalent from the first, the foundation of Rome and the other cities of Latium and Etruria, to say nothing of their growth in power and prosperity, presents serious difficulties. Pioneers are always especially subject to marsh fever, as is shown by the story of the Panama Canal. Then again, it is at least strange that the most malarious parts of Italy should have been the first to reach eminence, and our wonder must increase when we remember that the south coast, which is and has been for centuries almost as malarious as Latium, was chosen by the Greeks to be the seat of some of their most prosperous colonies, one of them, Sybaris, being situated, not on a height, but in a dangerous hollow. In the early history of the peninsula this fact stands out clearly—the flourishing regions are just those which, afterwards at least, were the most malarious, and that though there were others which, so far as can be ascertained, have never been unhealthy.

The discovery of Ross has shown that the amount of malaria in a country is not necessarily measured by the extent of marsh or surface water. If there are no Anophelines, or if the Anophelines exist but have not been infected, there is no reason why the disease should be present—nay, rather, it cannot be present. It will accordingly be well to consider the geographical and hydrographical character of the Italian soil apart from the actual amount of disease existing at any particular epoch.

The parts of the country best adapted to breed Anophelines are, briefly, the south coast-line, the ancient Etruria and Latium, and the banks of the rivers. Several districts, particularly the higher ground and the northern plain (except the banks of the Po and its tributaries) are either free from the disease or do not suffer from it to any serious extent.



The region around Rome, with which we are most concerned, is of a peculiar character. The hills on the Agro Romano generally have a subsoil of tufa or of clay. Accordingly, after a spell of rainy weather, the water permeates through the thin crust of earth on the surface, and accumulates between it and the subsoil. When the incline is regular the sheet of water descends to the valley and forms swamps or springs. But as the slope is, in general, very irregular, small marshes appear in the hollows on the sides of the hills. The outer soil, especially in the case of the clayey hills, tends to be dislodged, and to slip down into the valley below. Cultivation only accelerates the process by still further loosening the outer crust, and the mass of fallen earth impedes the drainage of the lower parts, as it turns the water into a boggy morass.\*

It can easily be seen that such a state of affairs is a great hindrance to agriculture, to say nothing of the danger to health if malaria be introduced into the district. Now in the last century there was discovered a vast system of drainage, of uncertain but undoubtedly ancient date, which, although choked up now, at one time carried off the subsoil water.

The use of these *cuniculi* was first pointed out by Di Tucci in 1878, and his work was vigorously followed up by Tommasi-Crudeli. They are to be found in all the tufaceous hills of the Agro Romano where the subsoil is composed of thick banks of tufa, but not where there are only thin layers of tufa resting upon strata of pozzolana.†

It seems fairly certain that these drains belong to the pre-Roman era, and were probably constructed by the Etruscans.‡ But the Romans apparently failed to appreciate their value; at any rate, they gradually fell into disuse, while the writers on agriculture are strangely silent about them.§

Celli¶ and others are convinced that the object of this drainage-

---

\*TOMMASI-CRUDELI, *Il Clima di Roma*: (English Translation by C. C. Dick, *The Climate of Rome and the Roman Malaria*, 1892), p. 28; 'In fact, it not infrequently occurs, during excavations, to find in such spots, at a depth of two metres, and even more, remains of ancient fountains or of ancient basins, which in former days were the recipients of most of those waters at the base of the hills, and regulated their proper flow.' This and subsequent references are to the pages of the English translation.

†TOMMASI-CRUDELI, *op. cit.*, p. 43.

‡See the excellent article in DAREMBERG-SAGLIO, *s.v. cuniculus*.

§This may be due to the fact that these writers had in mind farmers tilling land in other parts of Italy, where cunicular drainage was unnecessary.

¶*Malaria*, pp. 3, 4. To connect the *cuniculi* with malaria is an example of the 'marsh fallacy,' i.e., to suppose that the existence of marshes implies that of endemic malaria.



system was to prevent malaria. Yet if this was the intention, and if the Romans knew it, how strange it is that they neglected the necessary repairs. But it is by no means necessary to suppose that the country was malarious when the Romans took over the land, and if the purpose of the scheme was merely to prevent the denudation\* of the hills and to secure reservoirs of drinking water, it is quite conceivable that circumstances might occur in which the preservation of such elaborate works was no longer considered necessary.

Now the continuous wars with neighbouring states and the frequent outbreaks of pestilence† certainly offered serious obstacles to agriculture.‡ As early as the fifth century B.C. the Romans sent to Sicily to secure corn at the time of an epidemic.§ The tendency would be to replace ploughed land by pastures, and to seek corn elsewhere. But the change was very gradual; the Pomptine lands were a great corn-growing district late in the fifth century,¶ and were divided among the plebeians early in the fourth. Later on, of course, the foreign corn trade became a regular institution, and cattle-breeding and sheep-farming more and more replaced agriculture, until an attempt was made to encourage the growth of the olive and the vine. The *cuniculi*, then, were probably intended to promote agriculture, and the neglect of them seems to have been originally due to economic causes. But the country near Rome must have been fairly well cultivated down to the third century B.C., when Rome won Sicily and Sardinia.

By the second century B.C., when malaria was already endemic,

---

\*Cultivation, which only increases this denudation if there be no drainage, is quite possible with such a system as was formed by the *cuniculi*.

†If the *cuniculi* were in proper working order they would have prevented epidemics of malaria. But dreadful plagues did occur. Therefore either they were not malarial or the Romans had, as early as the fifth century B.C., neglected to keep the drains in repair—a most unlikely supposition if their effective working was considered necessary to keep down such a dreadful scourge as malaria. I infer that malaria was not yet a serious enemy, and that the plagues were typhus.

‡Livy, IV, 52: 'pestilentem annum inopia frugum neglecto cultu agrorum, ut plerumque fit, excepit.'

§Livy, IV, 25. There is evidence that before this (in 492) corn was brought from Sicily in time of famine. WARDE FOWLER, *Roman Festivals*, p. 76. SALVIOLI has proved (*Le Capitalisme dans le Monde antique*) that the tenant-farmers were not ruined by foreign competition, as they never produced more corn than they wanted for themselves. War and pestilence were their real enemies.

¶Livy, IV, 25.

certain parts of the country south of Rome were marshy and desolate. In 160 B.C. it was thought necessary to drain the Pomptine marshes.\* This was accomplished, but evidently the result was not permanent,† as Julius Caesar‡ was only prevented by death from again carrying out the same piece of work, and Horace, in his famous ‘Journey to Brundisium,’ describes how marshy was this region, through which ran a part of the Appian Way.§ Other writers of the early Imperial period can be quoted to show that the state of the Pomptine district was not improved.¶ In the other parts of Italy, besides several places in the south, there were marshy tracts in Etruria|| and Cisalpine Gaul.\*\*

The position of Rome is one which lends itself to the formation of marsh, and in ancient times the level of the Tiber was higher, and that of the valleys lower, than at the present day.†† The Velabrum was once a lake,‡‡ and the names Palus Caprea and Vada Terenti are suggestive of what formerly existed.§§ The building of the Cloaca Maxima and other sewers was a work of public utility independently of its possible advantage from the point of view of health. Marshes in a city are an inconvenience, and occupy valuable land; and so it is quite beside the mark to say that the sewers were built to free Rome from malaria. The river used often to overflow its banks¶¶—a fact familiar to us in the legend about

---

\*LIVY, *epit.*, XLVI: ‘Pomptinae paludes a Cornelio Cethego consule . . . siccatae, agerque ex iis factus.’

†At the time of the Gracchi several farmers were removed from cultivated lands to swamps when the boundaries were re-fixed (APPIAN, *Bell. Civ.*, I, § 18). We do not know exactly the districts referred to, but the passage proves that there was a considerable amount of marsh in Italy, and seems also to imply that it had increased, and that farmers had shifted their boundaries to be out of the way of the boggy ground. Cf. CICERO, *de lege agr.*, II, 27, ‘paludes emat.’

‡SUETONIUS, *divus Julius*, 44: ‘siccare Pomptinas paludes.’

§HORACE, *Sat.*, I, 5, and notice the ‘mali culices’ of l. 14.

¶[OVID, *Met.*, XV, 717; JUVENAL, III, 307; SILIUS ITALICUS, VIII, 381; LUCAN, III, 84; PLINY, *H.N.*, XXVI, 4.

||LIVY, XXII, 2.

\*\*STRABO, V, p. 212.

††See BURN, *Rome and the Campagna*, p. 22.

‡‡PROPERTIUS, V, 9, 5, ; TIBULLUS, II, 5, 33; OVID, *Fasti*, VI, 401.

§§BURN, *loc. cit.*

¶¶[HORACE, *Odes* I, 2; TACITUS, *Ann.* I, 76; *Hist.* I, 86; SUET., *div. Aug.* 30 (‘ad coercendas inundationes alveum Tiberis laxavit ac repurgavit’); *Otho*, 8. See NISSEN, *Italische Landeskunde* I, p. 324.

Romulus and Remus—in spite of efforts to check the evil by dredging. In modern times these inundations, owing to the change in the level of the Tiber, are of rare occurrence.

We see, then, that in the very early period Rome was marshy, but the land around it well drained, cultivated, and covered with highly prosperous communities. There is no reason to suppose that malaria was present. Such an hypothesis would involve the 'marsh fallacy,' while, were the disease prevalent, the rise of Rome in such a dangerous locality is difficult to understand. By the end of the fifth century the city was well drained, but there are signs that agriculture, owing to pestilence and probably to other reasons, was inadequate to furnish a continuous supply of corn for the growing population. If at this period malaria invaded the district from the south; the subsequent course of events becomes clear. At first, while cultivation was still carefully carried on, the disease would not spread; but the inhabitants, finding agriculture unprofitable, began to neglect drainage, and they were probably not yet aware that by so doing they were encouraging fever, as it would take some time to discover the character of the new disease. Then followed continuous wars, with the Latins, Samnites, Pyrrhus and Hannibal. The laying waste of the country increased the amount of marsh, besides ruining the farmers, and agriculture was still further discouraged by the importation of corn from Sardinia and Sicily, which were now Roman provinces. Hence malaria spread rapidly, and the Romans, at last alive to the danger, tried to drain the marshes and to foster agriculture. But the latter was commercially unprofitable, and sheep- and cattle-farming took its place, a change which would still further promote the conditions favourable to malaria.\* The very prevalence of disease without doubt contributed to the increase of *latifundia*—what was at first an effect at last became a cause—but this aspect of the question belongs to another part of my inquiry.

Modern historians, convinced that there must be malaria wherever there are marshes,† have been compelled to abandon the question as an insoluble puzzle. But the last ten years have revolutionised our ideas about the disease. To read the chapter on

---

\*See, however, pp. 116, 117.

†This 'marsh fallacy' has vitiated the arguments of all the historians. Before Ross made his famous discovery it was a natural error; now it is inexcusable.



malaria in Nissen's *Italische Landeskunde* (1883) is to be more than once reminded of the medical works of mediaeval physicians; but the discovery of Ross that the parasite is carried from man to man by Anopheline mosquitoes throws fresh light upon the problem. It is now known that two factors are needed before the disease can spread—infected persons and Anophelines. If either be wanting, malaria cannot exist. Now it is quite possible that malarious persons entered Italy in historical times and infected the mosquitoes, which, although present before, had not bitten malaria patients, and so had not been able to spread the disease.\* These infected mosquitoes in their turn passed on the disease to other men, and they again to other mosquitoes, until the whole country had its malarious sites. It will be seen that the evidence is not contrary to this supposition, which at least explains all the facts as far as we know them.

There is one, and only one, alternative. Professor C. Tommasi- Crudeli, in the published course of lectures entitled *Il Clima di Roma*, propounded the theory that the Italian peoples, not being afflicted with the health mania, refused to alter any of their plans through fear of fever.† They settled in a malarious district and, undeterred by death and sickness, persevered until they grew racially acclimatized.‡ The disease 'swept off, without exception, all those who were unable to offer any specific resistance; it spared almost entirely all such as were able to offer a stout resistance. The future prospects of the colony depended upon the proportion which these latter bore to the weaker category. Should the proportion of

---

\*See the excellent work of Major Ross, *Report on the Prevention of Malaria in Mauritius* (1908), especially pp. 49-52 (*Explanation of Outbreaks of Malaria*). Malaria was introduced into Mauritius in 1866; probably Anophelines were carried to the island on some steamer. At any rate, there is here a valuable historical parallel. Similarly, the infection of the tsetse-fly with the parasite of sleeping-sickness has, within the last few years, rendered uninhabitable vast tracts of land in Uganda. These two examples show clearly the importance of avoiding the 'marsh fallacy.'

†If we may take Livy as a safe guide, this statement is certainly not true. The epidemics of pestilence mentioned by him were often accompanied by panic, and the soldiers who had been engaged in Capua revolted against returning to the unhealthy district around Rome: 'se militando fessos in pestilenti atque arido circa urbem solo luctari.' LIVY VII, 38.

‡It should be remembered, however, that the question of race immunity is a thorny one. It certainly requires centuries (Ross in JONES, ROSS, ELLETT, *Malaria*), and many hold that where it seems to occur all the children pass through an unhealthy period until puberty, and either die or acquire personal immunity. See MANSON, *Lectures on Tropical Diseases*, p. 102.



the strong to the weak prove to be sufficiently great, the development of the colony was secured from the outset. This power of constitutional resistance has been proved to be hereditary, and those repeated selections caused by malaria in each generation conduced to the eventual increase of the resisting powers of the race, and that to such a degree as to enable it to found powerful colonies in unhealthy sites.\*

Tommasi-Crudeli goes on to say that quinine, the great specific for malaria, has saved alive a great number of those who without it would have died, and these, by propagating children with even a less power of resistance than their parents, have caused that physical degradation which is so marked a feature of those who inhabit malarious districts.

This natural immunity enabled the Etruscan and Latin cities to complete the works of sanitation which, in the course of centuries, diminished the amount of malaria without extinguishing it entirely. After these works were abandoned, the malaria increased to such a degree as to render many regions uninhabitable.†

This theory is almost the same as that of Professor Celli, who thinks that malaria came in great waves with long periods of diminished severity.‡ Tommasi-Crudeli might have strengthened his position by considering certain points which he leaves unnoticed. If the early epidemics of pestilence recorded by Livy were malarial, they may be regarded as Nature's attempts to cut off the unfit, and the recrudescence of malaria in later times may be due to the crowds of people who then flocked to Rome from healthier regions; these would not be immune, and so would swell the amount of sickness in the country.

But there are serious objections to the theory. However fearless the ancients were in the face of danger, there seems to be no reason why they should have chosen (as on this hypothesis they did) the most malarious places in Italy upon which to build their cities, when there were others not far away which were not objectionable on the score of unhealthiness. Again, if racial immunity made the rise of Rome and other cities possible, why did it not permit the recovery

---

\*TOMMASI-CRUDELI, *op. cit.*, p. 148.

†TOMMASI-CRUDELI, *op. cit.*, p. 69.

‡See Celli's Preface to the Italian translation of JONES, ROSS, ELLETT, *Malaria*.

of the land during the Empire and the Middle Ages? A theory also is required which explains why districts which previously, so far as we know, had never been malarious, gradually became so in later times. Tibur was praised by the ancients for its healthiness, but the modern Tivoli is (or was a short time ago) highly malarious. Instances could be multiplied.\* These facts are explained by the supposition that Anophelines or infected persons were introduced from without, but the 'immunity hypothesis' entirely fails to account for the change. Then there is the parallel case of Greece. Malaria has certainly increased in this country, although even in classical times it was highly infected,† and this increase cannot be put down to the abandonment of drainage works, nor did continual exposure make the Greeks immune, as it is said to have done in the case of the Romans. Finally, it is by no means universally held that the ancients were capable of coping successfully with malarious sites. Dwellers on the spot assure me that the foundation of Sybaris would have been utterly impossible if the district had suffered from endemic malaria when the colony was first planted there.

The early books of Livy contain many references to epidemics which at various periods devastated Rome and its neighbourhood.‡ These are never definitely stated to be malarial, and even though on one occasion the drying up of streams (a likely cause of malaria) is said to have preceded the outbreak,§ yet it may well be that the writer is merely interpreting past events by the light of his own experience.¶ They were in many cases very deadly,|| far more so

---

\*See, e.g. NORTH, *Roman Fever*, pp. 85-87. The banks of the Anio were once covered with farms (LIVY, II, 26), now they are very unhealthy.

†JONES, *Malaria and Greek History*.

‡See on the subject DUREAU DE LA MALLE, *Economie politique des Romains*, Tome II, ch. iii, and NORTH, *op. cit.*, p. 73.

§LIVY, IV, 30.

¶The description of the epidemic which occurred in Sicily in 212 B.C. (LIVY, XXV, 26) is a good instance of the way in which later writers confuse early epidemics with malaria. For some lines the account exactly describes an outbreak of this disease, and then occur the words 'postea curatio ipsa et contactus aegrorum volgabat morbos.' Now the ancients did not think that malarial fevers were infectious. Indeed malaria does not appear to be so, although it really is. See JONES, *Malaria and Greek History*, pp. 37, 46, 52, 57.

Note that Sicily was probably malarious in the fifth century B.C. *Ibid.*, p. 32.

||LIVY, III, 6; III, 32; IV, 25; V, 13. On the other hand the pestilence mentioned in IV, 52, was 'minacior quam perniciosior' and resulted in 'plurimorum morbis, perpaucis funeribus.' It is quite likely that this last was a malaria epidemic.

than malaria usually proves to be, cattle were sometimes attacked,\* and the outbreaks more than once coincided with times of scarcity or famine.† When the skill of man proved unavailing, the stricken people had recourse to the help of heaven. But it was not Dea Febris whom they worshipped—fever is never mentioned in connection with these plagues—but a temple was vowed to Apollo,‡ or a *lectisternium* was held,§ and on one occasion the worship of Aesculapius was introduced from Epidaurus.¶

It is probable enough that these pestilences were not always the same disease, but only one (or at most three) suggests malaria, while the greater number seem to be typhus, a common plague in the history of young nations, before the importation of corn makes the inhabitants independent of the local harvests.|| Typhoid suggests itself at once, but although the Romans drank the water of the Tiber, polluted as it was by the Cloaca Maxima and other sewers,\*\* down to 312 B.C., we cannot diagnose any of the diseases described by the ancient medical writers as certainly enteric. This is due to the constant prevalence of malaria, the pernicious forms of which are very apt to simulate typhoid, which latter disease was not clearly separated from other fevers until the seventeenth century, when Baglivi showed that Peruvian bark, a drug then recently introduced into Europe, acted as a cure in the case of malaria, but had no effect upon the disease afterwards called enteric or typhoid.††

It is, as has been said, just possible that the epidemic mentioned by Livy in IV, 52, was of a malarial nature, and the same may be said of the pestilence which attacked the Gauls during the siege of

\*LIVY, III, 6; III, 32; IV, 25; IV, 30; V, 13.

†LIVY, III, 32; V, 48.

‡LIVY, IV, 25.

§LIVY, V, 13; VII, 27.

¶LIVY, X, 47, and see BESNIER, *L'Île Tibérine dans l'Antiquité*. Note also the curious custom mentioned in LIVY, IX, 28 ('pestilentia orta clavi figendi causa dictatorem dictum'), of which a fuller account appears in VII, 3.

||CREIGHTON, *History of Epidemics in Britain*, Vol. I, p. 24. 'A bad season brought scarcity and murrain, and two bad seasons in succession brought famine and pestilence.' Orosius mentions these early plagues, but is a late authority, and furthermore, tells us little that we do not know from earlier and better sources. In one case, however (OROSIUS, III, 4 = LIVY, VII, 1, 2), he certainly implies that the disease was not malaria: 'non ut adsolet plus minusve solito turbata temperies . . . insuper etiam exspirata de Calabris saltibus aura corrumpens . . . sed gravis diuturna que . . . cunctos per biennium . . . tabe confecit.'

\*\*LANCIANI, *Ancient Rome*, p. 52, is wrong in suggesting that Cloacina was a goddess of typhoid. She was what her name implies, the goddess of sewers, and we have no evidence that the Romans thought that sewage might cause fever.

††WITHINGTON, *Medical History*, p. 323.



Rome.\* Northerners from a non-malarious country would suffer much more than natives.† But certainty on this point is impossible, and the arguments brought forward to prove the early prevalence of malaria‡ are all equally inconclusive; and besides, they are based on the erroneous supposition that where marsh is, there malaria also must be present. Cities were built on hills to protect the inhabitants in time of war; the thick woollen toga prevented chills, which otherwise might have resulted from the sudden drop in temperature characteristic of the Italian evening; and surely such a useful work as a drainage system does not necessarily imply the existence of any endemic disease. Contemporary literature is unfortunately lacking, and the statements of later writers cannot be trusted, as they lived when malaria was common, and may be transferring their own experience to previous times to which it does not necessarily apply. Thus Livy makes Camillus speak of the 'healthy hills' of Rome when the proposal was made to migrate to Veii,§ and the Capuan garrison refuses to return to the 'pestilential soil' around Rome.¶ Cicero says that Romulus founded a 'healthy city in a pestilential region,'|| and calls the altar of Dea Febris on the Palatine 'old,' although this, of course, may mean anything.

Whether Rome was or was not malarious before, say, 500 B.C., is a matter of dispute, but the disease was indisputably within the peninsula by that date. The proverb\*\* of the Sybarites, that 'he who wishes to live long must see neither the rising nor the setting sun,' is certainly a warning against going out of doors in the early morning and evening; now chills (which are very apt

---

\*LIVY, V, 48: 'fames utrimque exercitum urgebat, Gallos pestilentia etiam, cum loco iacente inter tumulos castra habentes tum ab incendiis torrido et vapore pleno . . . quorum intolerantissima gens umorique et frigori adsueta, etc.'

†Cf. JONES, *Malaria and Greek History*, p. 70.

‡LANCIANI, *Ancient Rome*, p. 50, holds that Rome and the Campagna were purified by volcanic action—sulphurous emanations and hot mineral springs. 'This is the only way to explain the presence of a thriving, healthy, strong, and a very large population in places which, a few centuries later . . . are described as pestilential.' But it is more than doubtful whether volcanic action would kill the mosquitoes everywhere, and the 'mosquito-theory' explains much better the healthiness of early times. As Burn points out (*Rome and the Campagna*, p. 22) the conditions were much more pestilential than they are now. We can only infer, either that there were no Anophelines, or that they were not infected.

§LIVY, V, 54; 'saluberrimos colles.'

¶LIVY, VII, 38.

||CICERO, *de republica*, II, 6: 'locumque delegit in regione pestilenti salubrem.'

\*\*ATHENÆUS, XII, 519, 520.



to precipitate malaria) are liable to be caught at these times, and Anopheline mosquitoes bite most at dusk and in the night time.\* Probably much of the so-called Sybarite luxury was nothing but the result of efforts made by the people to counteract the effects of their unhealthy environment. As it seems impossible, even to those who have lived on the spot, that malaria was endemic when Sybaris was founded, one is tempted to believe that the disease was introduced,† possibly by merchants coming from Africa, the ancient home of malaria, between 700 and 600 B.C. It made but slow progress, as the country was carefully cultivated and drained, but perhaps Latium was reached as early as 400 B.C. Ravenna in the N.E. was still healthy in the time of Strabo.‡ As Latium and the surrounding country was the scene of continuous wars and devastations, malaria strengthened its hold upon the land, as neglect of cultivation favours the growth of the Anopheline mosquito. Possibly the epidemic at the beginning of the third century B.C., owing to which the worship of Aesculapius was introduced to Rome from Epidaurus, was malarial in character, as in all probability the Greek priests of Asclepius were famous at this time for their treatment of malaria and its sequelae.§ At any rate, the Hannibalic war, during which Italy

---

\*See LENORMANT, *La Grande-Grèce*, Vol. I, pp. 225 and 287; GAROFALO, *Intorno Sibari e Turio*, p. 26; CANNONERO, *Dell'antica Città di Sibari*, pp. 8, 86, 87; TOMMASI-CRUDELLI, *op. cit.*, p. 136; JONES, *Malaria and Greek History*, pp. 30-32.

A few months after writing this pamphlet there came to my hands an article by Dr. F. GENOVESE, called *Il Clima antico della Magna Grecia e la Malaria attuale di Foce (Caulonia)*, contributed to the latest volume of the *Atti della Società per gli Studi della Malaria*. Dr. Genovese remarkably confirms my own conclusions.

He shows that in early times Magna Graecia could not have been very malarious ('La plaga avrebbe dovuto spopolarsi in un solo cinquantennio!' p. 462). From Thucydides, Virgil and Theocritus he proves that the flora and climate have greatly changed, and that the conditions have more and more favoured the increase of malaria. Pliny the elder says that there was no 'pestilentia' at Locri and Croton, and Columella notes that certain regions of Italy, which in ancient times had been too cold for the olive and the vine, subsequently became warmer. The evil effects of malaria upon the birth-rate are well brought out on pp. 477-479. In 68 families there are 159 living children, while 149 have died and the abortions number 29. No wonder that during the early Empire, when quinine was unknown, families at Rome were small!

†On its introduction, malaria would almost certainly be confused with those fevers which were already in the country. See NORTH, *op. cit.*, p. 66. The first epidemic is severe and not unlike typhoid, the remittent or sub-continuous forms predominating. See ROSS, *Report on the Prevention of Malaria in Mauritius*, p. 47.

‡STRABO, V, p. 213.

§WITHINGTON, *Greek Therapeutics and the Malaria Theory* in JONES, *Malaria and Greek History*, pp. 154-156. Curiously enough, there has been discovered an inscription to Aesculapius (of rather late date) containing the words *ὄγκον σπληνὸς σωθεῖς*. See BESNIER, *op. cit.*, p. 213.

was ravaged from end to end for several years, bringing agriculture almost to a standstill, must have produced exactly those conditions which encourage the disease. It is not surprising to find that in the year 208 B.C. a remarkable outbreak\* occurred which was almost certainly malarial.

### *Malaria in Latin Literature*

Plautus† in one of his comedies mentions fever, and the play in which this reference occurs contains a character who is suffering from swollen spleen,‡ an almost certain sign of long-continued malaria. Terence also uses the word *febris*, and even adds the epithet *cotidiana* (quotidian), an evident reference to malaria, and although both Plautus and Terence translated or adapted Greek plays, they would hardly have used language unintelligible to their audience. The famous censor, M. Porcius Cato, has left us a short treatise on agriculture. North is of opinion that malaria was unknown to him, or else that it was too insignificant to attract attention. But besides the references in the first chapter to *bonum caelum* and to the situation of a farm *loco salubri*, which North considers far too vague to be taken into serious account, there is later on a passage in which are mentioned 'black bile and swollen spleen,'§—a clear allusion to malarial cachexia. Quintus Fabius Maximus, consul in the year 121 B.C., is said by Pliny the elder to have been freed from a quartan fever in the excitement of a battle.¶

The satirist Lucilius, who died in 103 B.C., uses the phrase *querquera febris*.|| The adjective *querquerus*, connected with the Homeric *καρκαίρω*, means 'trembling,' and *querquera febris* is without doubt the ague, or, in other words, malaria with pronounced shivering. The same adjective occurs in a fragment of

---

\*LIVY, XXVII, 23: 'eo anno pestilentia gravis incidit in urbem agrosque, quae tamen magis in longos morbos quam in perniciosos evasit.'

†*Curculio*, I, 1, 17. Plautus uses *febris* once metaphorically (*Pseudolus*, II, 2, 48), and once more literally in fr. 241 (Winter) 'init te unquam febris.'

‡PLAUTUS, *Curculio*, II, *ad inît*.

§CATO, *de re rust.*, CLVII.

¶PLINY, *H.N.*, VII, 50, §166.

||PAULUS, *ex Fest.* (quoting Lucilius) 'iactans me ut febris querquera.'

Plautus,\* but the reading is doubtful, and the reference may be to a 'racking cough.'

It is clear, then, that malaria was well known to the Romans of the second century B.C., although, owing to the scantiness of the literary remains of this period, its prevalence cannot be accurately measured. If more literature had survived, we should probably have seen that the disease was on the increase, because the *latifundia* offered just those conditions which favour the growth of *Anophelines*.

Fevers are mentioned three times† by Lucretius in such a way that it is clear they occurred to his mind first whenever he was thinking of disease. We cannot be sure that he always meant malaria when speaking of fever, but the connection in one passage of bile and disease is significant, and in the sixth book, when he is enquiring into the causes of disease, he uses language which plainly shows that he was acquainted with malarial conditions.‡

Cicero makes many references to fevers, but the reader of his letters does not carry away the impression that Rome itself was highly malarious. He seems quite ready to remain in Rome during the summer and autumn, and that though he was, on his own confession, a man who feared disease.§ It is true that on one occasion he speaks of a pestilential year which was peculiarly fatal to the young,¶ but this is exceptional. On the other hand, the

\*The old reading gave: 'is mihi erat bilis, aqua intercus, tussis, febris querquera.' But Winter (fr. 64, *Frivolaria*) reads: 'is mihi erat bilis, (is) aqua intercus, (is erat) tussis querquera.' The word, after disappearing during the classical period, re-emerges with other homely expressions in later Latin. AULUS GELLIUS, XX, 1, 'aegrotationem gravem cum febris rapida et quercera'. See also other references in Forcellini. The corresponding Greek word was ἡπιάλος. See JONES, *Malaria and Greek History*, pp. 27, 28. *Quercera* is restored (for *periculo*) by some editors in MINUCIUS FELIX, XII, 'cum quercera quateris, cum febribus ureris.'

†LUCR. II, 34: 'nec calidae citius decedunt corpore febres, textilibus si in picturis ostroque rubenti iacteris, quam si plebeia veste cubandum est.'  
IV, 664: 'quippe ubi cui febris bili superante coorta est aut alia ratione aliqua est vis excita morbi.'  
VI, 655: 'numquis enim nostrum miratur siquis in artus accepit calido febrim fervore coortam aut alium quemvis morbi per membra dolorem?'

‡LUCR. VI, 1097: 'fit morbidus aer.'  
VI, 1100: 'aut ipsa saepe coortae de terra surgunt, ubi putorem umida nacta est intempestivis pluviisque et solibus iota.'

§CICERO, *ad fam.*, VII, 26: 'ego autem quom omnis morbos reformido.'

¶CICERO, *ad fam.*, V, 16: 'non mehercule quemquam audiavi hoc gravissimo et pestilentissimo anno adulescentulum aut puerum mortuum, qui mihi non a dis immortalibus ereptus ex his miseriis atque iniquissima condicione vitae videretur.'



fashionable physician Asclepiades, who was practising in Rome at the time of Cicero, declared that malarial fevers of a virulent type were common there,\* and his statement is borne out by the later evidence of Galen. At the time of Cicero, however, malaria was perhaps not so prevalent in Rome as it was thirty years later.

Cicero mentions, not only fevers, but also quartans and tertians, and it should be carefully noticed that neither he nor any other writer does so unless there is good reason to specify the type of fever referred to; generally, malaria is called *febris*. So when congratulating Tiro on the improvement in his condition, Cicero says that he 'hopes the patient will be better now that the fever has turned to a quartan'† (the mildest kind of malaria), and in the treatise *On the Nature of the Gods* it is argued that, if regularity implies divinity, even tertians and quartans, the periodicity of which is remarkably regular, must be regarded as divine.‡ There are numerous other passages in Cicero which refer to fevers, but most of them tell us nothing of importance. We are told, however, that whole districts were laid waste by malaria,§ that Sardinia,¶ Brundisium|| and Baiae\*\* were infected places, and that fatigue precipitated fever.††

\*CAELIUS AURELIANUS, *de morbis acutis*, II, 10: 'Asclepiades ait . . . . . apud Roman vero inquit frequentare advertimus has febres.' Asclepiades is probably referring to the malignant tertian fever. See GALEN, Kühn, vii, 435; where the remark of Asclepiades is confirmed.

†CICERO, *ad fam.*, XVI, 11: 'quoniam in quartanam conversa vis est morbi . . . spero te diligentia adhibita iam firmiorem fore.'

‡CICERO, *de nat. deor.*, III, 10: 'vide, quaeso, si omnis motus omniaque, quae certis temporibus ordinem suum conservant, divina dicimus, ne tertianas quoque febres et quartanas divinas esse dicendum sit, quarum reversione et motu quid potest esse constantius?'

§CICERO, *de lege agrar.*, II, 26: '(genus agrorum) propter pestilentiam vastum atque desertum': *ibid.*, 27: 'in Salpinorum pestilentiae finibus': *de fato*, 4: 'inter locorum naturas quantum intersit videmus: alios salubres alios pestilentes.'

¶CICERO, *ad fam.*, VII, 24: (of Tigellius Sardus) 'hominem pestilentiorum patria sua.'

||CICERO, *ad Att.*, XI, 21: 'loci gravitas hic miserrime perferenda': *ibid.*, 22: 'vix sustineo gravitatem huius caeli.' Cf. CAESAR, *de bello civ.*, III, 2: 'gravis autumnus in Apulia circumque Brundisium ex saluberrimis Galliae et Hispaniae regionibus omnem exercitum valetudine temptaverat.'

\*\*CICERO, *ad fam.*, IX, 12: 'gratulor Baiis nostris, siquidem, ut scribis, salubres repente factae sunt; nisi forte te amant et tibi adsentantur et tam diu, quam tu ades, sunt oblitae sui.' This passage throws light upon the difficult elegy PROPERTIUS, IV, 18. Marcellus almost certainly died of malaria caught at Baiae, as DION CASSIUS, LIII, 33, seems shrewdly to guess. For confirmatory evidence that Baiae was malarious see MARTIAL, IV, 57:

'horrida sed fervent Nemeaei pectora monstri  
nec satis est Baias igne calere suo.'

††CICERO, *ad fam.*, X, 21: 'ex labore in febriculam incidit assiduam et satis molestam.' Other passages in Cicero: *ad Att.*, V, 8; VI, 9; VII, 1; *ad fam.*, XVI, 15; *de or.*, II, 71; *Cat.*, I, 13.



The poet Horace affords valuable evidence about the malarious condition of Rome in his day. It is clear that:—

(1) The city was malarious in the summer and autumn months,\* and all who could do so left it for healthier parts.†

(2) Children were especially liable to fevers.‡

The evidence of Strabo is disappointing. He indeed states that Ravenna was healthy,§ Sardinia¶ and Paestum|| unhealthy, and he also mentions that in Latium malaria was prevalent about Ardea, between Antium and Lanuvium, in certain parts of the Setine district, and the region about Tarracina and Circeii.\*\* But it does not follow that other places were necessarily healthy; either Strabo was imperfectly acquainted with the facts, or else he thought fit to mention only such districts as were remarkable for their healthiness or unhealthiness.

I have examined carefully the writers of the first century A.D., and they fully bear out the conclusion one would be disposed to draw from the works of Horace, that Rome and certain parts of Italy were highly malarious, although it is plain that many districts which are now pestilential were then healthy enough. It would be tedious to give all the references, and I must confine my attention to the really pertinent passages. It should, however, be noticed that fever is mentioned quite an extraordinary number of times, and a comparison of, say Martial, with any modern English poet, would demonstrate the important part played by malaria in ancient Roman life.

---

\*HORACE, *Ep.*, I, 7, 5;

‘dum flos prima calorque  
dissignatorem decorat lictoribus atris,  
dum pueris omnis pater et matercula pallet,  
officiosaque sedulitas et opella forensis  
adducit febres et testamenta resignat.’

*Odes*, II, 14, and *Ep.*, I, 16, 15.

†HORACE, *Odes*, III, 29: *Sat.*, II, 6, 16.

‡HORACE, *Ep.*, I, 7, 5, and *Sat.*, II, 3, 288. Other references to fevers are *Odes*, I, 3: *Sat.*, II, 3, 30 and 145 (comatose form of malaria): *Ep.*, I, 2, 48: I, 16, 21.

§V, p. 213.

¶V, pp. 224, 225.

||V, p. 251.

\*\*V, p. 231. Cf. also p. 240, and see VITRUVIUS, I, 4: ‘quibus autem insidentes sunt paludes, et non habent publicos exitus profuentes, neque per flumina neque per fossas, sicuti Pomptinae, stando putrescunt, et umores graves et pestilentes in iis locis emittunt.’ The reference to *fossae* is the best direct indication I can find that the Romans used drainage as a means of diminishing malaria.

Seneca has many allusions to fever,\* and he clearly states that malaria often drove people away from their homes.† From Pliny's *Natural History* I have collected over forty references, consisting mostly of charms and quack remedies for ague. One of these is of special interest, as it shows how powerless ancient medicine was in dealing with malarial disease.‡ Martial contains nine references to fever, and three to the malignant tertian.§ He mentions a malarious farm near Rome,¶ and alludes to the unhealthiness of Ardea, Castrum Inui, Sardinia|| and Cyprus.\*\* Pliny the younger has many interesting passages, in one of which he speaks about the dangerous character of the coast of Etruria,†† and Tacitus‡‡ makes a similar remark about the Vatican district in Rome. Juvenal also mentions fevers,§§ and refers to the unhealthiness of autumn.¶¶

With the exception of Cato, no notice has yet been taken of the writers on agriculture. Varro affords striking testimony to the prevalence of malaria in country districts: 'cultivation in unhealthy districts,' he says, 'is gambling with the owner's life and property.' He goes on to say that although human skill is powerless to eradicate the mischief, nevertheless much good can be done by suitable measures, such as alterations in the structure of the

\*E.g., SENECA, *Apocolocyntosis*, VI: 'et imposuerat Herculi minime vafo, nisi fuisset illic Febris, quae fano suo relicto sola cum eo venerat: ceteros omnes deos Romae reliquerat. "iste" inquit "mera mendacia narrat. ego tibi dico, quae cum illo tot annos vixi."'

†SENECA, *ad Helviam*, VII: 'alios pestilentia aut frequentes terrarum hiatus aut aliqua intoleranda infelicis soli vitia eiecerunt . . . . . ex qua quid eos fugaverit incertum est, utrum caeli gravitas, etc.' Cf. also *qaest. nat.*, VI, 1, 6: 'in pestilentia mutare sedes licet.' Other interesting passages in Seneca are *qaest. nat.*, III, 16, 1; VI, 14, 3 and 4; VI, 27, 1; VI, 28, 1; *de benef.*, VI, 8, 1; *de ira*, III, 5, 1.

‡PLINY, *H.N.*, XXX, ii, §30: 'in quartanis medicina clinice propemodum nihil pollet. quamobrem plura eorum remedia ponemus, primumque ea quae adalligari iubent.'

§MARTIAL, *Ep.*, II, 40; IV, 81; XII, 90.

¶II, 85.

||IV, 60. For the unhealthiness of Ardea see also SENECA, *Ep.*, 105: 'qua ratione bonam valetudinem in Ardeatino tueris.'

\*\*IX, 90.

††PLINY, *Ep.*, VI, 5, §1: 'est sane gravis et pestilens ora Tuscorum quae per litus extenditur'; §46 'mei quoque nusquam salubrius degunt: usque adhuc certe neminem ex iis quos eduxeram mecum (venia sit dicto) ibi amisi.' Cf. TIBULLUS, III, 5, 1:

'vos tenet Etruscis manat quae fontibus unda,  
unda sub aestivum non adeunda canem.'

‡‡TACITUS, *Hist.*, II, 93: 'infamibus Vaticani locis magna pars tetendit, unde crebrae in vulgus mortes.'

§§JUVENAL, *Sat.*, IV, 57; IX, 17; X, 283.

¶¶*Sat.*, X, 221: 'quot Themison aegros autumnus occiderit uno.' Cf. VI, 517: 'metuique iubet Septembris et Austri adventum.'

house.\* The malarious condition of Apulia was known to Varro,† and in one famous passage he says that in marshy districts there grow tiny animals too small for the eyes to see; these enter the body by the mouth and nostrils, and cause ‘difficiles morbos.’‡ Columella condemns the building of a farm near a marsh, because there are bred therefrom swarms of insects armed with stings; further, a bog breeds in spring ‘pestilent swimming and creeping things,’ from which often come ‘caeci morbi’§—the nearest approach to the mosquito-theory that can be found in the ancient writers. Palladius has a passage to the same effect,¶ and he points out that the physical appearance of the inhabitants is a sure test of an unhealthy district.||

The medical writer Celsus is an eloquent witness to the malarious condition of Rome and certain parts of Italy in the first century A.D. By ‘fever’ he nearly always means malarial fever, and most of the precautions given are obviously intended to prevent ague. Malaria, in fact, is the disease which tends constantly to be uppermost in his mind.\*\* Particularly noticeable is the absence of any other virulent fevers; typhus, typhoid, small-pox and scarlatina appear to have been unknown, so that malaria was the endemic disease of the time. The prominence of malaria is equally remarkable in the works of Galen, and this writer distinctly states that the semitertian (malignant tertian) was very common in Rome.††

I have noticed some hundreds of other references to fever in the writers just mentioned and elsewhere, but they seem to throw no

\*VARRO, *de re rust.*, I, 4.

†I, 6.

‡I, 12.

§COLUMELLA, I, 5, 6. See also I, 3, 2; I, 4, 3.

¶PALLADIUS, *r. r.*, I, 7.

||I, 3.

\*\*I have dealt with the evidence of CELSUS in *Malaria*, ch. III. I should like to note here CELSUS, I, *prooem*: ‘interest enim, fatigatio morbum, an sitis, an frigus, an calor, an vigilia, an fames fecerit, an cibi vinique abundantia, an intemperantia libidinis’ (good list of causes which precipitate malaria); ‘praecipiunt, ut gravibus aut locis aut temporibus magis vitetur frigus, aestus, satietas, labor, libido’ (another good list); I, 2, ‘cavere . . . auras fluminum atque stagnorum’; I, 3, ‘per autumnum vero, propter caeli varietatem, periculum maximum est, itaque neque sine veste . . . prodire oportet . . . neque sub divo noctu dormire’ (chill precipitates malaria); I, 10; III, 3: ‘sequitur vero curatio februm, quod et in toto corpore, et vulgare maxime morbi genus est. ex his una quotidiana, altera tertiana, altera quartana est, etc.’ (febris = malaria); III, 18, 20 (malignant malaria); IV, 16 (splenic diseases).

††Galen, Kühn, VII, 435 and XVII, A, 121.

light upon our investigation except to show how common malaria was.

The preceding enquiry has shown that:—

- (1) the discovery of Ross makes it unnecessary to postulate a malaria-stricken Italy in early times, and so clears away a great difficulty felt by all previous enquirers, who have thought that where marshes are there must be malaria;
- (2) malaria was in the peninsula by 500 B.C., Sybaris being without doubt infected;
- (3) malaria travelled slowly, and Latium may not have been reached by 400 B.C.; Ravenna was non-malarious in the time of Strabo;
- (4) by the end of the Republic, Sardinia, Sicily, Etruria, Apulia, Latium and the southern coast-line were all more or less infected, while Rome itself was highly malarious in the warm months;
- (5) many places, malarious now, were healthy in ancient times, so that the disease has probably been continually on the increase.\*

#### *The Effects of Malaria*

I once thought that malaria was at least one of the causes of the downfall of the Roman Empire. Further research has led me to modify this view, but at the same time it has confirmed my belief that the disease greatly influenced the course of events, and was a serious factor in the lives of the inhabitants of Rome and many other parts of Italy.

Cicero and Seneca tell us that malaria depopulated certain districts, and it cannot be doubted that it was one of the causes which favoured the growth of *latifundia*. In deference to high authority I have, here and elsewhere, assumed that neglect of agriculture, in other words the *latifundia*, increased the amount of malaria in the country, but Major Ross assures me that this view is open to grave objections. 'This could probably occur,' he says, 'only when the population remains the same. If the population decreases at the same time to a very great extent, I doubt whether there will be much increase of malaria. I certainly know of one

---

\*See NORTH, *Roman Fever*, pp. 65-91; especially p. 87.



instance in Mauritius where this happened, only a few villagers being left, and the malaria disappeared entirely, though cultivation had been abandoned. On the other hand, there are numerous cases where cultivation, owing to the necessary irrigation, actually does increase malaria, and I fancy that this would especially occur in hot and dry countries like parts of Greece and Italy. As a general rule I think that depopulation is caused by malaria, and not the converse.\* Now parts of Latium and Etruria were once populous and flourishing which later on were fever-stricken and deserted.\* It is surely a safe inference that the change was largely due to the increase of malaria. What probably happened is that malarious sites were abandoned, and prosperous communities built elsewhere, as in North Italy. Mr. Spencer Jerome, of Capri, writes to tell me that previous to 300 B.C. nearly all the Roman colonies were founded in districts which are now malarious; after 300 B.C. they were nearly all built on sites which are still healthy. It is impossible for various reasons† to verify this statement in the case of each colony, but roughly speaking it is true, and 'shifting of population' may be taken as one result of the increase of malaria.

That malaria played an important part in the lives of the Romans is quite clear from one well-established truth; the great sufferers from the disease are the children. 'In summer,' says Martial, 'boys learn enough if they keep well,'‡ and this testimony to a fever-stricken childhood is confirmed by Cicero,§ Horace,¶ Galen|| and Scribonius Largus.\*\*. One of the most disastrous consequences of malaria is its effect upon the young;†† year after

---

\*See LIVY, VI, 12 and cf. DE TOURNON, *Etudes statistiques sur Rome*, I, p. 205: 'Vulsinii, Tarquinii, Tuscania, Vulcia, Caere, la puissante Veii, Falerii, Capena, étaient bâties au nord du Tibre dans les lieux malsains aujourd'hui, et ces cités étaient entourées de beaucoup d'autres villes. Sur la rive méridionale, Cures, Fidènes, Nomentum, Antemnae, Collatia, Gabie, Lavinium, Ardea, Lanuvium, occupaient les contrées aujourd'hui les plus périlleuses à habiter. Enfin les Volsques possédaient 23 villes dont plusieurs, telles que Corioles, Polusca, Suessa Pometia, Longula, étaient bâties dans une plaine infecte aujourd'hui. Ainsi l'air dans ces contrées était nécessairement suffisamment salubre'; DUREAU DE LA MALLE, *op. cit.*, p. 37; NORTH, *Roman Fever*, pp. 67, 68.

†Professor Celli tells me that it is impossible to obtain a satisfactory malaria map of the country.

‡MARTIAL, *Ep.*, X, 62.

§CICERO, *ad fam.*, V, 16.

¶HORACE, *Ep.*, I, 7, 7.

||GALEN, Kühn, XI, 23 and XVII, B, 642.

\*\*SCRIBONIUS LARGUS, ch. CXXXII. Cf. SERENUS, *ad typum quotidianae*: 'nam febrem vario depelli carmine posse vana superstitio credit, tremulaeque parentes.'

††See JONES, *Malaria and Greek History*, pp. 90, 91.

year the attack recurs until puberty is reached, when the patient acquires a partial (but only a partial) immunity. The evil effects of this unhealthy childhood often last all through life. Such, then, were the early years of Roman children, and it is surely a most important truth for the student of ancient social life.\*

Professor E. V. Arnold has pointed out to me that during the early Empire families were small, while the death-rate among children was large. He quotes Seneca *ep.* 54, 1; 65, 1; 78, 1, 4; 104, 1 and *dial.* VI, 16, 5. It cannot be doubted that malaria was chiefly responsible for the mortality; the evidence of Horace and Martial removes all uncertainty about the point.†

The shifting of population, and the harm done to the rising generation, may be regarded as undoubted consequences of malaria in the ancient Roman world. Nothing more, I think, can be proved to demonstration, owing to the incompleteness of the evidence; nevertheless, it would be wrong to assume that there were no further results. But other forces were in operation, and it is impossible to assign definitely to each the parts which they respectively played. I have shown elsewhere‡ that endemic malaria tends to produce moral decline and to make its victims pessimistic; but although a very good case could be made out by one who wished to connect disease with the state of morality at Rome during the first century A.D., it would be dangerous to attempt this, as so many other forces have to be taken into account.§ One point, however,

---

\*Julius Caesar suffered from a quartan in his youth (Suetonius, *div. Jul.*, I), and probably Augustus (*div. Aug.*, 81) and Claudius (*div. Claud.*, 31 and Sen., *apocol.*, VI) suffered from ague during the early part of their lives. The importance for the historian of the presence of malaria in Rome is clearly shown by Martial (VI, 70), who calls himself a mere child in years if from his life be taken away the time lost owing to 'cruel fevers, languor and pains':—

'at nostri bene computentur anni  
et quantum tetricae tulere febres  
aut languor gravis aut mali dolores  
a vita meliore separentur:  
infantes sumus et senes videmur.  
aetatem Priamique Nestorisque  
longam qui putat esse, Marciane,  
multum decipiturque falliturque.  
non est vivere sed valere vita.'

†I believe it was malaria, as well as the suspicious tyranny of the emperors, that killed off the old Roman families during the early Empire.

‡Jones, *Malaria and Greek History*, pp. 84, 85, 93, 94, 97-102.

§Yet I would note Pliny, *ep.*, VII, 1: 'terret me haec tua tam pertinax valetudo, et quamquam te temperantissimum noverim, vereor tamen ne quid illi etiam in mores tuos liceat.'

deserves mention. . . Many observers\* have remarked that the inhabitants of malarious regions are degraded and cruel. Now if there is one assured truth in the much disputed question of the change in the Roman character, it is that the Romans during their later history grew more brutal. Their gladiatorial shows at once occur to the mind, while nothing could be more striking than the contrast between the self-control shown during the early political struggles and the brutality which was so marked a characteristic of the Gracchan and subsequent disorders. Further research among other nations and tribes may perhaps confirm the probability that this change is to be attributed to the increase of marsh fever.

The desire to avoid illness has given rise to many habits and customs which have survived even when the original cause has ceased to operate.† The danger of night air was real enough when England was malarious; but now it is a superstition which, in spite of the teaching of science, dies hard. Similarly, I think that malaria encouraged drunkenness‡ among the Romans, but I would not in the least imply that other causes were not still more influential. I cannot find any evidence in the Latin writers, but analogy in such a case is not an unsafe guide. Mr. T. B. Bumpsted, of Trumpington, informs me that port-wine was a favourite prophylactic and remedy among the Fen people in the last century, and Dr. Genovese, of Caulonia, writes to say that the Italian peasants of S. Italy use rum§ for the same purpose. Menedemus is said by Diogenes Laertius¶ to have indulged in ‘many banquets, because Etruria was unhealthy.’ Again and again in the Greek writers|| do we find the recommendation to drink deep at the season of the Dog-star, which is the time when malaria becomes epidemic

---

\*E.g., MACCULLOCH, *Malaria*, pp. 437, 438, and NORTH, *op. cit.*, p. 103.

†I believe that, in time, the application of this truth will add largely to our knowledge of folk-lore.

‡Cf. MACCULLOCH, *Malaria*, pp. 437, 438.

§Pepper is added, he says, sometimes in enormous quantities. This spice was in great favour among the ancients, and, curiously enough, it is mentioned as a cure for ague by PLINY (*H.N.*, xxxii, 10, §114) and AEMILIUS MACER (*de pipere*: ‘quodque movere solet frigus periodica febris compescit, febris si sumitur ante tremorem’). But there are many other reasons why pepper should have been used in large quantities, e.g., the difficulty of keeping sweet the meat of cattle killed before the winter, when there was no food for them.

¶DIOGENES LAERTIUS, II, 133.

||E.g., HESIOD, *Works and Days*, 587-593; THEOGNIS, 1039, 1040; ATHENAEUS, I, §22 (a Pythian oracle, two fragments of Alcaeus and one of Eupolis).



both in Greece and in Italy. Was this because of the ague? Or was it merely to enable men to bear more easily the heat of July? Once again the question must be left undecided until observers in malarious districts have collected further information, so that the 'comparative method' may be applied in the case of ancient Italy.

One word in conclusion. The non-medical writers vary considerably in the accuracy with which they refer to disease. Among the historians, Tacitus\* and Caesar† are worthy of mention for their restraint, and for the accuracy of such information as they think fit to give, and I cannot discover any mistakes in Suetonius. Livy, on the other hand, allows his imagination full play, and sometimes combines, in a most extraordinary manner, the conditions that favour the spread of malaria with the symptoms of contagious disease.‡ Now it is likely enough that a writer who is careless in one respect will be careless in other respects also, and I venture to suggest that we may thus derive an additional test of the accuracy and credibility of the ancient historians.

#### *Additional Note*

The April number of *Janus* (1909) contains an article to which I should like to call the attention of physicians and historians. I offer no comment on the views put forward, but as they may influence medical practice, as well as throw light upon history, medical men throughout the world would do well to consider them.

The writer, Dr. Otto Effertz, a Governmental vaccinator in Mexico, attempts to prove that the virulence of an infectious disease is not absolute, but relative, being the resultant of two factors, which vary according to the country in which the disease is endemic and the people who are attacked by it. These factors are:— (1) The virulence of the microbe, which differs in different countries; (2) the extent to which the patients have become immune through natural selection. In other words, the microbes, as the result of their struggle with men, gradually increase in strength;

---

\*TACITUS, *Hist.*, II, 93, 1.

†CAESAR, *de bello civili*, III, 2.

‡E.g., LIVY, XXV, 26. This account reminds one of the imaginative pictures of pestilence given by the poets, e.g., SILIUS ITALICUS, XIV, 585, seqq., 594, seqq., ; 611 and 620; VIRGIL, *Aeneid*, iii, 137, seqq. (really a good description of malaria, but the disease is said to have attacked the trees and the crops).



natural selection evolves more powerful micro-organisms. On the other hand, a race of men is evolved more capable of resisting them. The resultant represents the malignity of the disease, and it will vary as the factors vary. Dr. Effertz then notices two remarkable facts:—(1) African malaria is deadly for Europeans, but very mild for Africans. (2) American malaria is deadly for American Indians, but mild for Europeans. He infers (*a*) that the African parasite has grown more virulent during the thousands of years it has been in Africa; (*b*) that the American parasite is much less virulent, having been recently carried to America. The African negro has won his battle; the European has partly won it; the American Indian has yet to win it. The European is superior to the American parasite, but inferior to the African parasite. The Indian is inferior, the African negro superior, to both.

Dr. Effertz applies similar reasoning to syphilis and yellow fever. He shows that the Spaniards could not have carried out their conquests if the Continent had been as fever-stricken as it is now, and as a matter of fact history tells us little about fever in those days. Malaria was probably brought over from Europe; it now kills over 50 per cent. of all Mexican Indians.

I have tried to apply the reasoning of Dr. Effertz to ancient Italy, but although there are recorded cases of Romans catching malaria abroad, and of foreigners catching malaria in Italy, the evidence is not, I am afraid, sufficient to justify any definite conclusion being drawn from it. But Dr. Effertz has clearly proved that malaria and yellow fever, which are now widely spread over the American Continent, were once confined to certain very limited localities. Now the hypothesis of such a 'generalisation' of malaria in Italy accounts admirably for the facts so far as we know them.

### *Summary of the Consequences of Malaria*

Malaria attaches itself to particular districts, and its effects may be classified as follows:—

(1) The rich, the capable and the energetic seek healthier homes, and so the inhabitants of a malarious district tend to become a mere residue of the poor and wretched.

(2) Cities being, as a rule, less malarious than cultivated plains,

the urban population tends to absorb the agricultural class, and national physique and well-being suffer in consequence. Cities isolated by malarious surroundings often fall into decay and ruin (South Italy).

(3) This process will obviously be accompanied by great economic loss, for extremely fertile districts may fall altogether out of cultivation.

(4) Malaria afflicts especially the young, whose physical powers are so weakened by repeated attacks of fever that childhood may be one long illness, and adequate education impossible. As Martial puts it, *aestate pueri si valent, satis discunt*.

(5) Exertion and strain often bring about a relapse, because the malaria parasite will live in the human body for months, or even years. Naturally, the inhabitants of malarious places tend to avoid fatigue and to become sluggish and unenterprising.

(6) Account must also be taken of the loss of life, loss of time, and the physical suffering caused by the disease, besides the permanent psychical disturbances it may produce in the patient. The inhabitants of malarious districts age rapidly (ARISTOTLE, *Probl.*, XIV, 7).

### *Bibliography*

N.B.—Many works have been written about malaria in Italy, but the discovery of Ross deprives most of these of their value. I include here such works as will help any reader who wishes to study the effects of malaria in that country.

*Atti della Società per gli Studi della Malaria*, especially vols. iv, viii and ix.

BERTAUX (E), *La Malaria en Italie* in *Revue des Deux Mondes*. Aug. 15th, 1900.

BROCCHI (G. B.), *Dello Stato fisico del Suolo di Roma*, 1820.

CANINA (L), *Storia topografica di Roma e sua Campagna*, 1846.

CELLI (A), *Malaria* (Eng. trans. by Eyre), 1901, pp. 1-6.

DUREAU DE LA MALLE (M.), *Economie politique des Romains*, 1840, vol. II, pp. 21-52.

JONES (W. H. S.), *Malaria* (with R. Ross and G. G. Ellett), 1907.

Italian translation of the same by Dr. F. Genovese, with a Preface by Professor A. Celli, 1908.

*Malaria and History* in *Annals of Tropical Medicine and Parasitology* for February, 1908.

LANCIANI (R.), *Ancient Rome*, 1888, pp. 49-73.

MATTHÆIS (G. DE), *Sul Culto reso dagli antichi Romani alla Dea Febbre*, 1813.

NISSÉN (H.), *Italische Landeskunde*, 1883, vol. I, pp. 410-418.

NORTH (W.), *Roman Fever*, 1896, pp. 65-91.

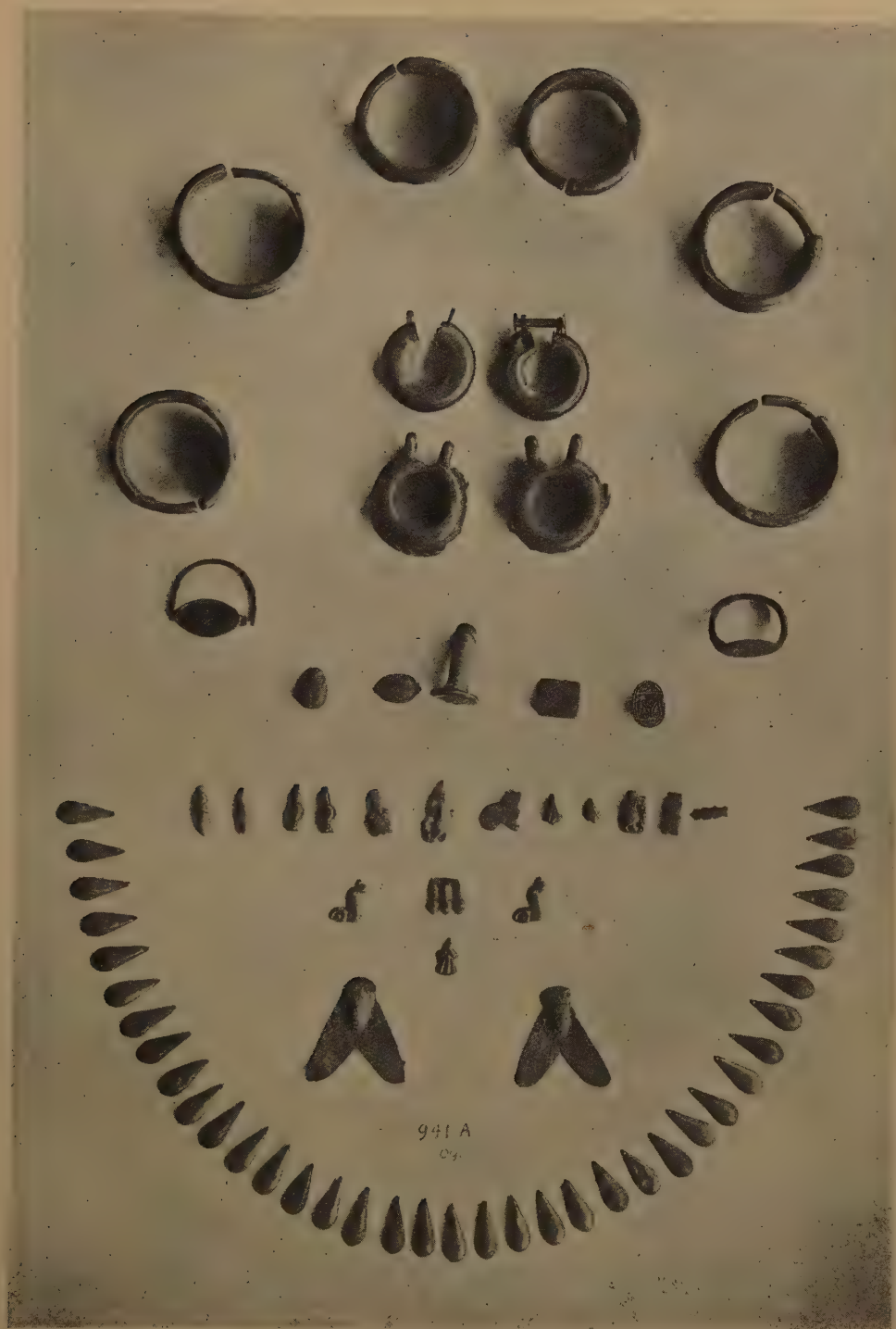
PINTO (G.), *Roma, l'Agro romano e i Centri abitabili*, 1882.

TOMMASI-CRUDELI (C.), *Il Clima di Roma*, 1886. Engl. Trans. 1892.,

*Alcune Riflessioni sul Clima dell'antica Roma*, 1887.

LE COMTE DE TOURNON, *Etudes statistiques sur Rome*, 1831, vol. I, pp. 204, seqq

TUCCI (P. DI), *Dell'antico e presente Stato della Campagna di Roma*, 1878.



XVIII<sup>TH</sup> DYN. JEWELS FROM AN UNDISTURBED TOMB-DEPOSIT. 941, A.09.







VIII DYN. COPPERSMITH'S OUTFIT AND MODELS, WITH ALABASTER TABLE. 747, A.09



XVIII DYN. TOMB-DEPOSIT FOUND UNDISTURBED. 949, A.09.





XII<sup>TH</sup> DYN. DAGGERS. 1092, 860, A.09.



XVIII<sup>TH</sup> DYN. POTTERY VASE. 949, A.09.



VI<sup>TH</sup> DYN. A TYPICAL TOMB DEPOSIT. 969, A.09.





# EXCAVATIONS AT ABYDOS, 1909: PRELIMINARY DESCRIPTION OF THE PRINCIPAL FINDS

By JOHN GARSTANG, D.Sc.

WITH PLATES XV, XVI, XVII

The antiquities described below were found in the course of excavations at Abydos in the spring of 1909.

The work was chiefly confined to three sites, but in the ordinary course of soundings other features were disclosed, notably a fine tomb of the first dynasty, through which one wall of a series of vast subterranean vaults had been constructed. One of these chambers was found to have been arranged as a Christian Church, and the Coptic writing upon the walls may be as early as the fourth century A.D.

The objects found belong to six different periods:—

- (a) II<sup>nd</sup> Dynasty (before B.C. 3000): royal seal impressions in clay; two great flint implements; small vase of alabaster,—found in and near the Shuna(t)-el-Zebib.
- (b) VI<sup>th</sup> Dynasty (before B.C. 2500): bronze objects, cylinder seal, amulets, alabaster and pottery vases; numerous undisturbed burials,—all found on the desert-edge near the temple of Rameses II.
- (c) XI<sup>th</sup> Dynasty (before B.C. 2000): alabaster vases, beads and amulets,—found in a portion of the necropolis west of the Coptic Cemetery.
- (d) XII-XIII<sup>th</sup> Dyn. (circa B.C. 2000 or before): small stelae, objects of stone, pottery and metal; daggers, scarabs, beads and ornaments; found in the remaining tombs south of the Shuna.
- (e) XVIII-XIX<sup>th</sup> Dyn. (circa B.C. 1400): The complete furniture of two undisturbed tombs, including figures in alabaster and pottery; vases of stone and faïence; vessels of bronze; jewels of gold, beads, scarabs and personal ornaments. A great stela, found among the tombs of site (b).

- (f) Latest Dynasties and Ptolemaic Period (circa B.C. 300):  
 painted cartonnage and beads, etc., from mummy-cases; figures of silver forming necklace of a mummy: found among and over the tombs (b).

An exhibition of the antiquities brought to England was held during the month of July, by permission of the Council, in the rooms of the Society of Antiquaries, at Burlington House, London. There were, however, a number of objects that could not be shown, having been retained by the *Service des Antiquités* for the Egyptian Museum in Cairo.

### *IIInd Dynasty*

Archaic royal seal-impressions, discovered in a re-excavation of a building within the old Shuna(t)-el-Zebib, provide new material for the chronology of the Kings linking the Second and Third Dynasties.\* The name which predominates is that of Kha-Sekhemui,† indeed it appears probable that the building was a palace of that King.‡ Another name found was that of Neter-Khet,§ whose tomb (primary or secondary) was found and excavated some years ago at Bêt Khallaf.¶ Putting together the old and new association of names,|| the sum of evidence seems to corroborate the supposition that King Per-ab-sen pre-deceased his Queen Ne-Maat-Hap, who remained regent during the reign of her infant son Kha-Sekhemui, and that the latter was succeeded by a younger brother Neter-Khet.\*\* This departure from the regularity of succession, which was probably matriarchal, marks the change of Dynasty.

Two of the smaller sets of fragments of jar-sealings described below, from which royal names of the IIInd Dynasty could be restored, were also selected for the Museum at Cairo.

---

\* A selection of restorations is published by Professor Newberry on p. 130 below, with plates XXII-XXV, from drawings by Mr. Schliephack.

† Nos. 1-4. Cf. Ayrton, *Abydos III*, Pl. IX, where sealings previously found in the same buildings are reproduced. Our No. 1 is identical with his No. 9; and another fragment not published by us seems to be the same as his No. 14. In our examples these two were impressed on the same mud-cap; but Mr. Ayrton's specimens are recorded as found in different sites.

‡ For Plan, see Ayrton, *op. cit.*, Pl. VII.

§ Nos. 6-9. GARSTANG. *Mahasna and Bet Khallaf*. London, 1902. Pl. VIII, IX, X.

¶ GARSTANG. *Tombs of the Third Egyptian Dynasty*. London, 1904. Frontispiece.

|| Both Ne-Maat-Hap and Per-ab-sen are associated with Neter-Khet (*Mahasna*, Pl. X, Nos. 7, 8), and the Queen is found with Kha-Sekhemui (PETRIE, *Royal Tombs II*, Pl. XXIV, No. 210). I also suspect the name Neter-Khet on the fragment published by Petrie (*op. cit.*, No. 211).

*V-VIth Dynasties*

The excavation of several hundred tombs of the Vth and VIth Dynasties has provided a much wanted series of well-established types of objects illustrating the archaeology of that period. The tombs were found in great measure undisturbed and free from misleading features; and the objects have been classified as a useful basis for future comparative study. They include numerous forms of vases in alabaster and in pottery, as well as beads of various stones, and a variety of utensils and other objects in copper. The stone vases may be generally distinguished from those of earlier and later periods by their tapering and often pointed forms: handles are very rare. In the earliest Dynasties the prevalent forms were open bowls and dishes, worked freely in alabaster, slate, diorite, porphyry, and other stones of considerable variety. In the period of these discoveries, alabaster was employed almost exclusively; one bowl of diorite was found (919, A.09), but from its appearance it would seem to have been already old when placed in the tomb. There were, however, a few small dishes of granitic stone. A cylindrical vase of dark stone (968, A.09) and a bowl with ornamental neck (1004, A.09) are also noted as exceptional, the former in material, and the latter in form, both simulating more ancient models. In general, it may be said that materials other than alabaster were found to be worked sparingly at this period. The button-seals and pendant-charms of these times are of special interest, the former from their seeming relations with Cretan seals, and the latter in the history of magic. A stone cylinder seal bearing the royal name of Pepy helps in determining the exact date of the deposits associated with it; and is also an object of intrinsic interest. Its form is unusual for the period, being modelled on the smaller cylinder seals of the earliest Dynasties. Enclosed in a panel, surmounted by the hawk, are the royal names: 'Mery-Ra, Mery-Tauï.' From the rest of the inscription it is seen that the seal belonged to, or was made by, the royal sculptor, who is already known in history from a similar specimen.

The tomb-group illustrated by the upper photograph on Plate XVI (numbered 747, A.09) has become the property of the Cairo Museum. This unique series includes a coppersmith's crucible, melting pot, dishes, manufactured knife-blades, chisels, and other models. These were found undisturbed in a tomb of the VIth



Dynasty, and with them was the fine table of alabaster upon which they are here shown. Another group that remains in Cairo belongs to the same early period, and includes a standing vase of alabaster with narrow neck and upright handle. In front of this vessel, and possibly ornamenting the spout, was the design of a uraeus. The upper portion of this was broken away, but the lower part remains, and the tail of the serpent is continued in relief around the shoulder of the vase.

### *XIth Dynasty*

The most attractive specimens of the XIth Dynasty are the finely-worked vases of alabaster, in particular a cup with pedestal from tomb 1113, A.09. It may be seen from these examples how great a change is already taking place in the forms of vases and to some extent in the materials employed. The standing cylindrical vessels of alabaster, for example, are now comparatively small; globular shapes with narrow necks are coming into fashion; and a new material of peculiar beauty now makes its appearance, like a translucent marble, grey-blue in colour. It is probably a variety of alabaster naturally stained by contact with antimony.

### *XIIth Dynasty*

Not much has been added this year to the material remains of the XIIth Dynasty. The funerary objects of this period were more fully represented by the discoveries of the two preceding seasons. There are, however, some noteworthy specimens, as, for example, two bronze daggers from tombs 860 and 1092 (Plate XVII). The smaller of these has an ornamental mid-rib; and the handles of both are pieces of ivory, of characteristic crescent shape. The rivets that bound the whole together are still preserved. There are also a number of small funerary stelae, and the well-inscribed lintel of a stone door-frame; as well as a representative series of scarabs and small ornamental objects of the period.

### *XVIIIth Dynasty*

The tombs of the XVIIIth Dynasty that were excavated are not numerous, but they included several of rare character with their rich deposits undisturbed. Among these was a series of vaulted chambers (numbered from 941 to 949) entered from a common shaft,

in the excavation of which no fewer than eight interments were found intact. The tomb itself had been constructed in later times in the middle of the favourite burying ground of the VIth Dynasty, and several of the square pits characteristic of this latter period were found in its floor. The gold jewels, of which a selection is illustrated on Plate XV, and the remarkable vessels on Plate XVI, came from two of the chambers of this tomb. The whole of this group will repay close study, both from the association and variety of the antiquities, and from the perfect technical qualities and peculiar beauty of several examples. There may be noted in particular the bracelets of gold, the collar of gold pendants, the gold ring and gold-mounted scarabs, the ear-rings of gold, with patterns in twisted wire around them, and those in blue and yellow glass which are obviously fashioned to the same design. There are also small pendants of gold, lapis-lazuli, and other rare materials, as well as some which represent natural forms, like the fly, the uraeus and the hawk. Among the larger objects, some of the vases of alabaster and stone are of considerable delicacy and beauty, features too often lacking in the conventional furniture of Egyptian tombs; their forms and handles will also prove of interest to the archaeologist.

The figure-vase of alabaster to the right of the top row on Plate XVI is a rare specimen, based on the well-known Puntite model, its handle is designed as the figure of a child. There are three precious examples of ceramic art: first, the glazed dish, with pattern in black outside and within; secondly, the unique circular vase with naturalistic pendant ornaments bound around its stem (Plate XVII); and thirdly, the terra-cotta figure vase of a kneeling girl. The last is one of the finest examples of this kind of art, both from the modelling of the subject and its technical qualities. The girl is represented with a child upon her back and a drinking horn (or scoop) upon her knee. The appearance of this peculiar object is not accidental, as may be seen by comparing it with that on a similar figure in alabaster in the MacGregor Collection. The minuteness and finish of the work are alike admirable.

Among the single objects retained in Cairo is a metal mirror from the same group, 949, with its handle in the shape of a slender female figure.

## IMPRESSIONS OF SEALS FROM ABYDOS

By PERCY E. NEWBERRY, M.A.

WITH PLATES XXII, XXIII, XXIV, XXV

These royal seal-impressions were discovered, as already stated in the preceding paper, *Excavations at Abydos, 1909*, in the course of the re-excavation of a building within the old Shuna(t)-el-Zebib at Abydos.

They provide new material for the chronology of the Kings linking the Second and Third Dynasties. The names which predominate are those of Kha-Sekhemui and Neter-Khet.

Similar sealings found in the same building have already been reproduced by Mr. Ayrton, *Abydos III*, Plate IX.

Plates XXII, XXIII, XXIV, XXV, herewith, contain reproductions and restorations of the most important of the seal impressions discovered in 1909, together with the necessary commentary in the closest possible juxtaposition.

I.



Repeated.

Kha-sekhemui, with name of a department of the Treasury.  
Cp. Sealings of Per-ab-sen (Petrie, R.T. II. No 17b), and of Neter-khet in Quibell Hierakonpolis II pl. 2xx.

II.



Repeated.

Kha-sekhemui, with name of a department of the Treasury.  
Cp. Sealing of Sekhem-ab in Petrie, R.T. II. 170.

III.



Kha-sekhemui, with name of a department of the Treasury. For the name of this department compare sealings of Per-ab-sen (Petrie R.T. II 178)

IV.

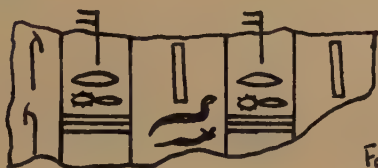


Kha-sekhemui, with title of the "Overseer of the Foreign Country".  
An impression of this seal was found by Ayerton in 1904 (Abydos III. pl. IX. 9.)





V



Neter-khet, with name of a  
department of the Treasury.  
Cp. Garstang Bêt-Khallâf, pl. IX. 5a  
For the as zefau on earlier seals see  
Petrie R.I. II. 166, 167. 174 etc. [with No VI]

VI



Neter-khet, with figures of  
divinites(?). Cp. Garstang, Bêt-  
Khallâf, pl xxvi. 8. Found with  
No V.

VII



Neter-khet, with title of an official(?)

VIII



Neter-khet, with title of an official(?).

IX



Neter-khet.

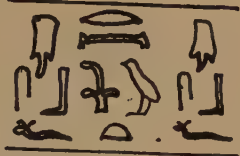
X.



Neter-khet.  
Cp. Garstang, Bêt-  
Khallâf pl. xxvi. 1.



XVI



Sabef with title. The name Sabef occurs on a stela found by Petrie at Abydos.

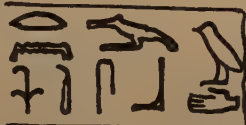
XVII



Private sealing of a scribe & Royal Sealer named Merer. cp. wooden

Cylinde. Q. 125. on Pl. LXV of Quibell, Hierakonpolis II.

XVIII



Private sealing of Sebek-ud(?) with title. The form of the crocodile is interesting.

XIX



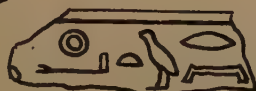
Fragment.

XXa



Fragment.

XX



Fragment.

XXI



Fragment.

XXII



WMC No. XIV.

cp Petrie, R.T.I. 189. for form of tree.

XXIII



Fragment.





## TWO CHEROKEE CHARMS

By JOHN B. DAVIS

The two charms which follow were communicated by the writer, who is of Cherokee descent, and familiar with the Cherokee language, to Professor Elton, of the University of Liverpool, in a letter dated Chelsea, Oklahoma, August 10, 1908.

### I. *A Charm to Destroy an Enemy*

This charm was told me by an old woman named RδB, or Ailasi as it would be in English.\* She got the charm from her grandfather, who got it from his grandfather, and *he* got it from some remote ancestor, who, like all of his descendants, was a mighty magician.

This old man lived when the world was new, and his name was Ianigini (ShYh). When Ianigini lived the sun moved much closer to the earth than it does now, and Ianigini worked in every way to increase his power. One bright day in midsummer, he spread out his white tanned buckskin cloak on the ground, and when the sun was directly overhead he threw his magic stone hatchet at her,† after repeating some charm that is not now remembered. The hatchet never came back, but four (some say seven) drops of blood fell on the white deerskin. It was the blood of the Sun, and when he made medicine the words of the formula came to him. It is the most powerful of all, for whoever knows it and will observe the proper ceremonies can kill anyone. A man cannot use it to kill another unless the intended victim is an enemy. On this account most of the medicine men do not know it, for they say charms for pay.

THE CHARM :—‘*To send them to the other side.*’

‘*Listen ! Now I step over your soul. You are ——— of the ——— Clan.  
I have put your spittle deep under the ground. Your soul shall be below*

---

\* In default of Cherokee type, which is not easily obtained in England, the characters have been imitated as closely as possible from the writer's transcript.—J. L. M.

† Note that the sun is feminine, as in other Cherokee Folk-tales.

*the depths. I have covered you with black rock. I have come to cover you with the black slabs, never to be seen again. May your path lead to the black coffin of the upland of the Darkening Land. Be it so for you! May the clay of that highland cover you completely. May not even the nail of your smallest toe remain uncovered. May it be black for you.*

*'May the black clay stay there at rest on the black house over your black soul in the Dark Country. With the black coffin and the black slabs I cover you. Now fades your soul away. When darkness comes may your spirit leave you. May it go in the black paths of the land of the dead, and never reappear here. Listen!'*

For the charm to be effective, it must be done when the moon is dark. The conjurer must have spittle or some part of the body (a nail paring, or a lock of hair) of the victim. This hair, or dust moistened with spittle, is enclosed with four splinters from a tree that has been struck by lightning, and seven earthworms in a hollow joint of the poisonous wild parsnip. These must be buried under seven black stones. When it is dark the victim will die, *unless* he should employ counter-charms, or unless his *real* name should be different from the one used in the formula.

## II. *A Charm for Snake-Bite*

I have heard this charm more than once. It must be repeated four times, while rubbing tobacco-juice on the bite. It must be rubbed on four times. Then blow on the place four times. The blowing and rubbing must be done in a circle, and the motion must be to the left, because when a snake lies down it coils to the right, and we must uncoil its spirit from the wound and not allow it to rest there.

THE CHARM.—*'For those who are pecked by a snowbird.'*

*'Listen, Ku! It is only a frog that has put the intruder in him. Listen, Ho! It is merely a lizard that has put it in him. Listen, Ku! It is only an earthworm that has put the intruder in him. Listen, Ho! It is only a tree toad that has put it in him.'*

The phrase 'pecked by a snowbird,' or 'scratched by a briar,' means that the patient has been bitten by a snake, but because the Rattlesnake—the snake chief—is very powerful, it is not safe to accuse them; and if we lay it to the frogs or lizards they cannot hurt us anyway.

### III. *Other pieces of Folklore from Oklahoma*

It is very hard to get Cherokee formulae, for there are very few left who know even the language, and less than ten per cent. of the people in this territory are Indians.

There are a great many negroes here, though, and a great many of them are believers in *voodoo*, and the only way to get some of them to work is to threaten to 'trick' them. I almost always carry a snake-bone for that purpose.

Most of the white people are very ignorant and superstitious, too. Last week a woman brought a little girl, who was badly burned, to me, and asked me to draw out the fire. The girl's grandmother knew the charm, but could not say it to the girl, for it is effective only when a man tells it to a woman, or a woman to a man. You have probably heard the charm; it is:—

‘Come out fire; go in frost;  
Father, Son, and Holy Ghost.’

and must be repeated three times while blowing on the burned place. After blowing on the place, I sent her to a physician.

The last time I was out at my farm, the farmer asked me to give him a charm to hive swarming bees. You have probably heard it, or a similar one:—

‘Mary, holy Mother,  
In fair or stormy weather,  
Bring them down together,’ etc.



## THE LIVER EATER: A CHEROKEE STORY\*

By JOHN B. DAVIS

Long, long ago, just after the old animals went back, a girl came out of a hole where dead men were buried. Because of this, the people knew she must be a witch, even though she was young and beautiful. We do not know what her name was, but she was an awful witch; seven witches in one. The people knew this, but they were afraid to say anything about it, for fear that she would harm them.

Once a hunter from one of the overhill towns visited in the town where the girl lived. We do not know what his name was. It was long ago, when our feet were still in the white path. He was a very handsome man, and when the girl saw him she loved him, and wanted him for her husband. She was very beautiful, too, and they were about to be married, when some of the people warned him that she was a witch,—that she was not born of a living woman. That night he died on his way back to his home in the northern mountains.

She was enraged at this, and determined to have her revenge on that town and on all the people of that clan. We do not know what clan it was. This was a very long time ago, while we still lived in the white house; when all the hill country was ours, and all the land on the other side of the mountains.

She was a powerful witch, and tried to put spells on them and make them die, but the conjurers in that town made medicine that overcame her charms. This was very long ago, and the conjurers were not all dead and their charms forgotten, as they are now.

Then she did the most desperate thing a mortal can do, a thing the bravest men tremble to think of. One night when the moon was hiding from his wife, and when it was very dark, she killed two† children and went to water with them. There she cut them in little pieces and sang the awful song that calls the Ooktana, the great horned serpent.

---

\* Communicated by the writer, who is of Cherokee descent, and familiar with the language, to Professor Elton, of the University of Liverpool, in a letter dated Chelsea, Oklahoma, October 19, 1908.

† Some accounts say 'four.'

The song was a very terrible one, and it is not safe even to think of it, much less to repeat it, and it is a good thing that it is now forgotten. All of this was very long ago, while we still lived with our faces to the rising sun, and had not turned to the house of darkness, as we now have.

When she had finished singing, a great horned Ookтана glided out of the water. He was not the one she wanted; she wanted the chief; so she sang another and more powerful song of the stronger medicine, and other and larger ones came until the ground around her was covered with the slimy bodies of hissing serpents.

Then she said the most horrible charm of all, and the great chief of the Ookтанas came roaring out of the water. He was hideous to look at; his eyes were fiery, with great white rings about them. His branching horns rose sharp and high, his forked tongue spat poison, his gleaming teeth were white and red, green fumes rose from his nostrils, and the gleaming jewel between his horns shone like a torchlight in a dark night. He soon devoured all that was left of the children, and asked the woman what she wanted.

She told him that she wanted power to overcome her enemies, and the people of the town she lived in. The Ookтана asked her if she feared him, and she said 'No! I am not afraid of anything there is.' She was a Cherokee. 'Then if you will come into the water and lie with me to-night, I will give you what you want.' Then it was good for her that she was a witch and not afraid, for he became even more terrible to look at, with his great bloated body covered with spotted scales.

Now this happened very long ago, before even the Unakees, the white men, came over; in the good time when we still lived in the white house, when we sat on the white benches against which the white peace-pipe leaned. Our feet were still in the white path which was swept clean.

The next morning when the woman came away she brought with her a scale from the body of the Ookтана, and a tip of his branching horn. Now these are the greatest medicine there is, except (of course) the jewel on the head of the Ookтана. She was also given power to hide her heart outside of her body, and her food must no longer be the food of other people, but she must eat nothing but human livers. Whenever she killed anyone, as many years were

added to her life as had been taken from the one she killed. Her favourite food was the livers of young children, and she was very old, and a great many lives had been added to hers.

Usually ordinary people could not see her, for she could make herself invisible. Even the most powerful conjurers were never sure that they saw her, for she could take any shape, and often appeared as a bird, or animal. She was covered all over with a hard horny skin, that weapons could not pierce, that fire could not burn, nor water dampen. No harm could come to her.

She had a very long bone-like finger on her left hand. This finger was very sharp, and when she could get near enough, she would stab people with it, and kill them. On this account some people called her Spear-Finger, or Owl-Finger. She was an awful witch. Often she would take the shape of a small bird or insect, and fly to the place where children were playing, and when no one was watching, she would take her own proper shape and stab them. Sometimes she would take the form of an absent member of the family, and enter a house, and kill all the people there.

Sometimes her victims died immediately, but more often they would sicken and die. The person stabbed did not always know that his liver was taken, for there was no wound, and no pain was felt.

Now this thing kept on for many generations, and afterward other people, the Seneca, the Shawnees, and the Muskogees were made, and lived near us in the old country. We did not always walk in the white path, but often people were killed. So many wars had occurred on account of these killings, that, after they had held a council of all the seven clans, it was decided to make 'beloved' towns, or 'peace' towns, where a man could go and be safe when he had killed a man. He could stay there until his clan-chief and the chief of the clan to which the dead man belonged could decide as to what should be done in the matter.

Now this town where the witch stayed was one of those towns, and she kept on killing the people until the head-men were afraid that they would all perish. The conjurers tried to drive her off, but her medicine was the stronger, and she stayed.

Then they held a general council, and all the people of the seven clans came together, and after the clan-chiefs and head-men had

talked it over, it was decided to make another effort to drive her away.

Then all of the people were told to fast and to go to water every day for four days, while the conjurers made medicine to drive her away.

Now at that time a Muskogee had taken refuge in that town, and every day when no one was looking he would eat a little. When the fourth day came, all of that town, the old men, the chiefs, the women and the little children, went down into the river and sang the songs and said the charms that should have driven Old Spear-Finger into the inaccessible mountains. The Muskogee did not go down with them. He could not understand Cherokee, and probably he did not know what they were trying to do. The people did not seem to notice that he was not with them, and they were much astonished when Old Spear-Finger came and suddenly killed a half-dozen children.

Then the conjurers found who had broken the fast, and they killed the Muskogee, and once more the town fasted for four days, and made medicine and drew a magic circle around that town, and laid down the medicine-arrows in the paths, so that Spear-Finger could not turn back, and drove her to the high mountains. Then for a while we had peace; but when the summer was over, and the people had to go to the mountains for nuts, Old Spear-Finger would kill them. That year there was a great drought, and they did not raise any corn or beans, and the pumpkins and calabashes died of the heat. However, there was a heavy fall of mast, but when the people wanted to go to gather the chestnuts and acorns, Old Spear-Finger would kill them.

Then all of the people met and held another council, and sent seven conjurers to the far west to the home of the Thunderers.

When they got to the home of their elder brothers they called to the first man 'Oh, grandfather, you who have said, "When my grandchildren call to me in their greatest trouble, I will hold up their faces," help us, for we are in trouble.' This was long ago, before the Sunset-country was moved so far away.

The Thunderers gave them some sort of medicine, or charm, and they came back, and dug a great pit in the path of the Stone-Woman, the Liver-Eater. Then the people set fire to the dead



leaves around the foot of the mountain, and soon they saw an old woman come hobbling down the path. They were not sure that it was the Spear-Finger, for she looked like an old woman who lived in the town.

When she came to the pit the poles broke, and then she showed her true nature. She turned from the feeble old woman into the terrible Spear-Finger, and began thrusting around in all directions, with her dreadful forefinger. She tried to turn herself into a bird, and fly away, but there were so many conjurers there and their medicine was so strong that she could not do so. Then all the warriors began shooting their arrows at her, and so many shot together that they could not see the sun, but the flint heads of the arrows splintered against her stony skin.

They had almost filled the pit with arrows, and had tired themselves until they could no longer draw the bow-string. While they were resting and waiting for the boys to bring more arrows from the town house, a bird perched on the hand of the Stone-Woman, and they knew that she must have her heart hidden there. Then the men began shooting at her hand, and she knew that they had discovered her secret, and she began to jump around furiously, and try to get out of the pit, but a lucky shot pierced her heart and she died. Then all of the women and children brought leaves and branches and filled the pit, and covered her. They lighted the branches and burned her for seven days and nights. At the end of that time there was nothing left but the scale of the Ooktana, and the tip of his horn. These the conjurers kept, for they are powerful medicine for doing harm.

And that was how they killed the Liver-Eater or Spear-Finger.

## EXCAVATIONS AT TELL HALAF, IN NORTHERN MESOPOTAMIA\*

By JOHN L. MYRES

Tell Halaf is an ancient site in North Mesopotamia, situated at the point where the principal head waters of the Chabur river converge to form the main stream, the only principal tributary which the Euphrates receives from the north-east after it enters the Mesopotamian lowland. The site has recently been visited and excavated by Dr. Max Freiherr von Oppenheim, who has published a brief account of his discoveries in a recent number of the German series of popular archaeological summaries, entitled *The Ancient East*.

His excavations at Tell Halaf took place in November, 1899, and the following months, and resulted in the discovery of an important building with sculptured plinth of a type which is common to Assyrian and Hittite architecture, and has become familiar to the English public through the recent excavations of the Liverpool Expedition under Professor Garstang at Sakje Geuzi.†

The site is at present quite deserted, with the exception of a small settlement of Circassians at a few minutes' distance. Considerable traces were found of a Roman town, which formed the uppermost layer on the ancient site. They included drums of columns and square blocks of wall-masonry, but no inscriptions or important minor finds. Irrigation works were noted on both sides of the Chabur river, but their age is quite uncertain; their interest is chiefly as confirming the evidence of numerous small mounds in the neighbourhood of the principal site, as to the existence of a considerable and prosperous population in this region in early times.

The principal mound appears to have been gradually accumulated on a natural rise in the ground which was itself of very moderate height; the greater part of its present mass is composed

---

\* MAX FREIHERR VON OPPENHEIM. *Der Tell Halaf, und die verschleierte Göttin*. ('Der Alte Orient.' Vol. X, part 1.) Leipzig (Hinrichs), 1908, 8vo, pp. 44, with fifteen illustrations.

† *Liverpool Annals of Archaeology*, Vol. I, pp. 97-117, plates xxxiii-xlix.

of the ruins and débris of successive strata of buildings. Its present surface is somewhat irregular, and this is due to the different rate of accumulation of rubbish at different points. Dr. von Oppenheim began his excavations at the south-west corner of the mound, at a point where the natives had already begun to plunder it in search of treasure. The principal ancient stratum was found to lie at most two metres below the surface. The principal building which was brought to light consisted of the western wing of the principal gateway of a large building: it included the left door jamb of the principal door, which faced towards the north. Continuous with



SKETCH PLAN OF THE FAÇADE, SHOWING (IN SOLID BLACK)  
THE PARTS ACTUALLY RECOVERED, AND (IN DOUBLE LINES)  
THE RE-CONSTRUCTION OF THE REMAINDER.

this to the left or western side was a façade, about five metres wide, protected, at the end remote from the doorway, by a projection of the building about a metre and a half northwards. Thus the door and its façade form the back wall of a broad shallow recess in the actual front of the building. The door jamb and façade consisted of a plinth-course of massive slabs of stone, about a metre high; the door-jamb was carved in relief in the form of a sphinx or other animal with lion's paws: the fore quarters of the animal in front of the façade are nearly half a metre wide, and are carved almost in the round, producing the effect of a great watch-dog guarding the entrance. Unfortunately the head and shoulders of the animal are broken away. On the slabs of the façade are carved, in the following order, outwards from the doorway—first, a lion marching inwards towards the door-jamb, with open mouth and tail sweeping the ground. It is executed in a vigorous but simple style, in very flat relief, with the principal internal lines of the body and head indicated rather by grooves than by modelling: the head and feet, however, are represented in more rounded and elaborate manner. In the free space above the back of the lion is inscribed a short cuneiform inscription, 'Palace of Kapar, son of Hanpan.'

Next to the lion comes a smaller slab with a standing figure of a bearded man, represented full-face, with both arms raised to the

height of the shoulder, brandishing in the right hand a mace, with a spherical head perforated to receive the shaft, and in the left hand an indistinct object which might be interpreted either as a human leg, held by the foot, or as an unsymmetrical club. The figure is clothed in a foldless tight-fitting garment, with a fringed hem and a waist-belt. Its feet are bare. On its head is a high spherical cap, flat topped and decorated with vertical lines rising above its lower rim. From this rim there appears to hang a hood or veil, which partly conceals the hair, and falls in elaborate folds or coils at the shoulders. The beard is long and nearly pointed, and the upper lip appears to be shaven. Above each ear of the figure rises a large horn, like a cow's horn, which bends forward and touches the point of the other one above the forehead. On the front of the body is a short cuneiform inscription in the same terms as that above the lion.

The third stone of the façade shows a hunting scene; a great stag moves towards the doorway, and looks back over its shoulder at a hunter, who follows on foot and aims an arrow at it with his bow; both beast and man are carved in the same flat relief as the lion, with considerable use of simple grooves to represent the internal lines. The man wears a short-armed tunic, and a loin cloth reaching to the knee, and confined by a waist-belt. He is bearded, and his hair escapes from under a narrow head band, and falls in rounded masses on his shoulder.

On the return-wall, which forms the west end of the recess containing the façade, is carved a monstrous winged figure, four footed, and with a human head, horned, and crowned with a cylindrical cap, with long twisted locks falling in spiral coils on either side of the face. This head also is bearded, and is represented full-face like the human figure already described. The wings, of which only one is shown, are vigorously modelled, and show five ranks of feathers. The breast of the figure is covered with a scale-pattern, probably intended likewise to represent feathers; and there is a pattern of alternate groups of oblique straight lines on the underside of the body to represent a growth of shaggy hair. In other respects the style of this figure resembles that of the other animals.

Another trench a little to the south-east yielded the shattered fragments of the eastern door-jamb, with a similar animal standing



sentinel, and looking outwards; it had the feet of a griffon or a bird, but the upper part was destroyed. West of this door-jamb, parts of a similar façade to that on the west were found in place, but too badly damaged to be worth description. A little further to the north-east, however, another carved slab was found in place, with the remains of a lion upon it, in a rather more refined style of relief carving. In the same hole was found a very fine griffon head, carved in the round, with broad simple surfaces and great vigour of expression: it is possible that this head belongs to the mutilated body, which has been described already. Another fragment represents the head of a horned goat, and also the capital or base of a column with a ring of obtuse-angled leaves in a drooping position round it.

Another shaft, sunk a few steps north-westwards, revealed the most important piece of sculpture which the site has produced: it is the upper part of a human figure, with upturned face, and features so curiously blurred in the execution as to give the impression that the intention of the artist was to represent the head as veiled. The face is flat, and nearly circular, and the features are only slightly indicated. Over the chin the outlines flow in a large concave curve, with a distinct fold falling in front of each ear, and a row of conventional grooves across the breast, running down vertically into as many spiral coils. Another fragment found on the site shows a similar treatment of the back of the head, and in this instance the grooves and spiral ends clearly represent a loosely falling head-dress.

The head now in question is beardless, and the excavator assumes that it is intended to be female. From the shoulders downwards, as far as the figure is preserved, the workmanship is very rough and somewhat mutilated. A curious feature of the head is that the eyes were inlaid with oval pieces of polished black basalt, surrounded with a white cement: only one of these eyes was preserved, and as this was loose it has been brought away by the excavators. It is a curious inconsistency on the part of the artist that he should have represented the eyes in this realistic manner, if he conceived the figure as being veiled.

As the lower part of the figure is lost it is impossible to be certain how it was continued downwards; the excavator thinks that

it formed the fore part of a stone sphinx or other four-footed creature, like that already described.

Among the smaller finds the only matters of importance are (1) the traces of charred timber, which are sufficiently clear to prove that the place was destroyed by fire: and (2) a number of coins of late Roman and Saracen issues, which show that the site was re-occupied down to the 14th century of our era. A few engraved gems prove occupation also in Seleucid times; and a clay cylinder and a spindle-whorl, of types which are common at Sinjirli, support the general impression conveyed by the sculpture as to the probable date of the principal building.

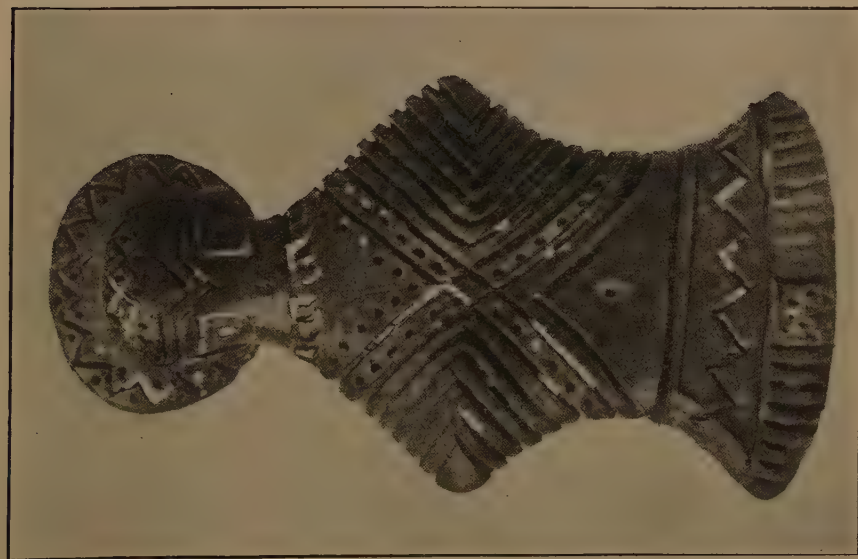
This building clearly belongs to the style of architecture and sculpture which for the present is described as Hittite; the great sculptured door-jambs, partly in relief, partly in the round, recall similar sculptures and architectural forms at Boghaz-keui, Sinjirli, and Sakje Geuzi to the westward, and also the doorways of Sargon's Palace at Khorsabad on the other. The marching lion on one of the slabs of the façade may be compared also with the lions found by Dr. von Oppenheim himself at Harran, and in the Tektek mountains, in the course of the same expedition. The design on the next slab to the lion in the façade seems to represent the Hittite storm god, Teshup, as he is represented at Sinjirli, and on other monuments of the same Hittite style. The identification of the Veiled Goddess, if it be a goddess, is less doubtful. The excavator, not unnaturally, suggests identification with Ishtar, whose veiled visit to the under-world is a well-known incident of Mesopotamian mythology.

The almost complete absence of inscription makes it impossible to identify either the ancient name of Tell Halaf, or the precise historical position of the builders of its palace. The brief inscription on the slabs of the façade record only, according to Prof. Delitzsch, the fact that this is the 'Palace of Kapar, the son of Hanpan.' The fragmentary inscription below, to the Veiled Goddess, seems to contain the name of the god Ashur, but whether in combination, as is so often the case, or independently, is not clear. The short inscription already quoted, however, is of this importance, that it settles the question, whether this type of portico, with projecting door-jambs and sculptured façade, represents the

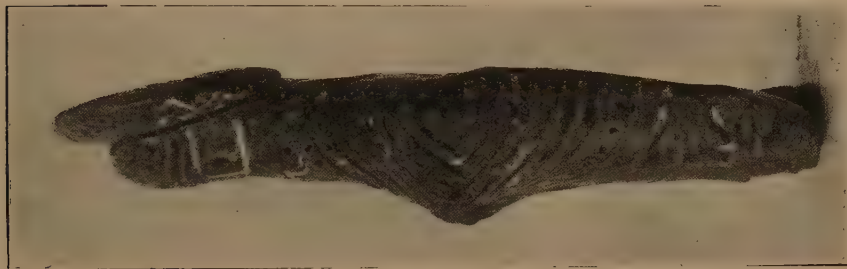
entrance to a temple or to a palace, in favour of the latter alternative. The style of the writing indicates, according to the excavator, that the building belongs to a period about the year 900 B.C., and this accords well with the circumstance that Kapar seems to describe himself as the independent owner of the palace, and not as dependent on the King of Assyria. The building, therefore, belongs in all probability to the period of the comparative weakness of Assyria, which precedes the great Assyrian conquest of the 9th century. On the other hand, the style of the sculpture betrays strong Assyrian influence, and consequently presumes considerable intercourse between this region and the middle Valley of the Tigris. No Assyrian sculptor, however, could easily be imagined as responsible for works of art so rough and provincial in their execution.

The nearest approach to a historical reference in Assyrian chronicles to any site corresponding to Tell Halaf, is the record of a campaign of Asshur-nazir-pal in 884 B.C., in which a city on the Khabur river, which the conqueror calls *Bet-Hadipu* or *Bet-Halupi*, was captured, and this name accords very closely with the form of the modern name Tell Halaf.

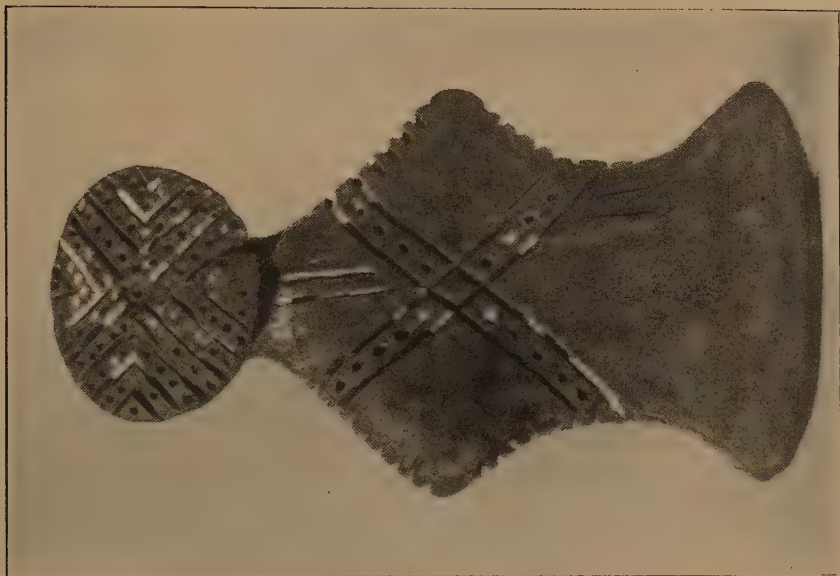
It is much to be hoped that Dr. von Oppenheim may find opportunity, under the new Turkish regime, to return to this interesting site, and complete excavations, of which we have clearly only a first instalment here.



FRONT.



SIDE.



BACK.

PREHISTORIC FIGURINE FROM ADALIA IN ASIA MINOR. I.







BACK.

SIDE.

FRONT.

PREHISTORIC FIGURINE FROM ADALIA IN ASIA MINOR. II.



## TWO PREHISTORIC FIGURINES FROM ASIA MINOR

By T. E. PEET

WITH PLATES XXVI-XXVII

The two terra-cotta figures shown on the Plates were bought this year at Adalia, on the south coast of Asia Minor, by Messrs. Hasluck and Woodward.\* They are said to have been found at a depth of two metres from the surface at Chai-Kenar, near Istanosz, about twelve hours north-west of Adalia.

Both figurines are made of the same fairly pure clay, brownish-ochre both in surface and in fracture; they have apparently no slip, but the surface is very highly hand-polished. The incisions were probably made, before firing, by actually cutting out portions of the clay with a sharp instrument, and not by merely tracing them with a pointed tool. They were originally filled with a white paste, traces of which may still be seen. Both figures are of the flat type which the Germans call *brettförmig*, and both are female.

The larger figure (Plate XXVI) is 9·5 centimetres in height. It is by far the more naturalistic of the two. The clay is slightly raised to show the breasts, and the sex is again clearly indicated in the centre of the lowest line of ornament. The legs are not represented, and the arms are mere stumps. The head presents remarkable features. The eyes are drawn away to the sides; the eyebrows are strongly marked, and perhaps partly confounded with the nose. Where the mouth should come, there is a minute puncture which at first sight seems almost accidental; compare, however, the punctured mouth on Plate XXVII. A fringe of hair is shown on the forehead by means of a pattern of cross lines and dots. The two vertical lines on the back of the figure might be either a tail of hair or a pendant attached to the necklace. The round flat object on the head is distinct from the coiffure, and is probably a hat. Round the neck is a necklace with numerous pendants. To what extent the incisions on the body are meant to represent clothing, it would be

---

\* I have to thank these two gentlemen for permission to publish the figurines.



hard to say. From the indication of sex it is probable, though not certain, that the figure was meant to be nude, in which case the incisions on the upper part of the body would be merely conventional. If, however, they represent a garment, it is a curious one, covering only the breasts and shoulders, and kept in place by two straps crossing on the back. But the figure is so conventionalized that the original garment may have been very different from this, and it should be noted that similar V-shaped ornaments occur on the other figure, not only on the body, but on the head.

The smaller figure (Plate XXVII) is 8.5 cm. in height, and is more conventional in type than the other. From the neck downwards it is almost a replica of it, except that there are no incisions on the back. The necklace is, however, slightly different, and the head entirely so. The eyes have wandered out to the edges, and there is a great deal of V-shaped ornament which represents no natural feature at all, and is entirely gratuitous. Now this V-shaped ornament is exactly what occurs on the breasts and shoulders of both figures. May it not be purely conventional there too? If we neglected it we should have left simply two bands, crossing in front (and in the case of the larger figure both in front and at the back), which, if they mean anything at all, represent two sashes, one over each shoulder.

These figures present a point of great interest. Both are of exactly the same clay and workmanship, and they were presumably found together. It is probable that they are by the same hand, and certain that they are of the same date. Yet one is far more conventionalized than the other. Thus we have one more example of the way in which the typological method may be misused. It is true that a conventionalized form must arise later than the more natural form of which it is the degeneration, but it is also clear that the natural form may survive, and both types be made side by side.

Coming to comparisons, we may at once refer to the figure, also from Adalia, published by Professor J. L. Myres, in the *Journal of the Anthropological Institute*, XXX, pp. 251-6, Plate xxiv; and subsequently acquired by the Ethnographical Department of the British Museum.

This figure is much more naturalistic than those described here.

It is of black clay, and not of the flat type, but carefully modelled in the round. The right leg is depicted as folded back under the body, which Professor Myres believed to be steatopygous. But despite these differences, there are points of resemblance. The figure is incised in exactly the same style as ours, there is the same conventional representation of hair on the forehead, the same minute dot for a mouth; on the neck are two necklaces of precisely the type seen on our larger figure, and a rough cross on the top of the head may stand for the flat hat with the cross-ornament, of which we have such a fine example here.

In fact, the similarity in technique and detail is so striking that we may safely attribute all three figures to the same civilization, and perhaps approximately to the same date. Professor Myres believed the figure described by him to belong to a period on the margin between the neolithic and the early metal age. Our figures may well be of about the same date. The fact that they are rather more conventional than his does not, as we have already seen, prove them to be later. Indeed, they may well belong to the pure neolithic period, and to that date I should be inclined to attribute them, mainly on the ground of their remarkable polish. But certainty is impossible.

Going now further afield in the Mediterranean, we may note that the true flat or *brettförmig* type of figurine is practically confined to Troy, where it occurs in Cities II-V, but is usually made of marble. The Cretan and Aegæan figurines are never really flat, nor are the north Greek and Thessalian;\* and hence we may assert that, as far as we know at present, the home of the flat figurine was Asia Minor, and we may wonder whether the inhabitants of Troy II-V and of the Adalia district inherited the idea from a single source.

Passing on to compare details, figurines cut off at the hips occur among those of Troy† already referred to, and also in the Cyclades.‡ The pointed head on our smaller example is also found at Troy.§

---

\* Mr. WACE found a flattish, but very naturalistic figure this year at Tzani Maghoula in Thessaly: see below, Pl. xxxii, 4.

† SCHLIEMANN. *Ilios*, figures 216, 220.

‡ TSOUNTAS. *Ἐφημερίς Ἀρχαιολογική*, 1898, Plate xi.

§ SCHMIDT. *Schliemann's Sammlung*, p. 279, No. 7515.

To the remarkable hat of the larger figure I know of no exact parallel. An incomplete figure from Thessaly\* has indeed the head flattened above. But this is probably a coiffure held in place by a fillet shown clearly on the figure.

The cross-sashes back and front may be paralleled by a figure from the Laibacher Moor,† but I can find no example in the Aegaeon or Asia Minor except a very rough specimen (with single crossed lines in front) from Troy.‡

V-shaped ornaments somewhat similar to those on our figurines occur on some figures from Roumania.§

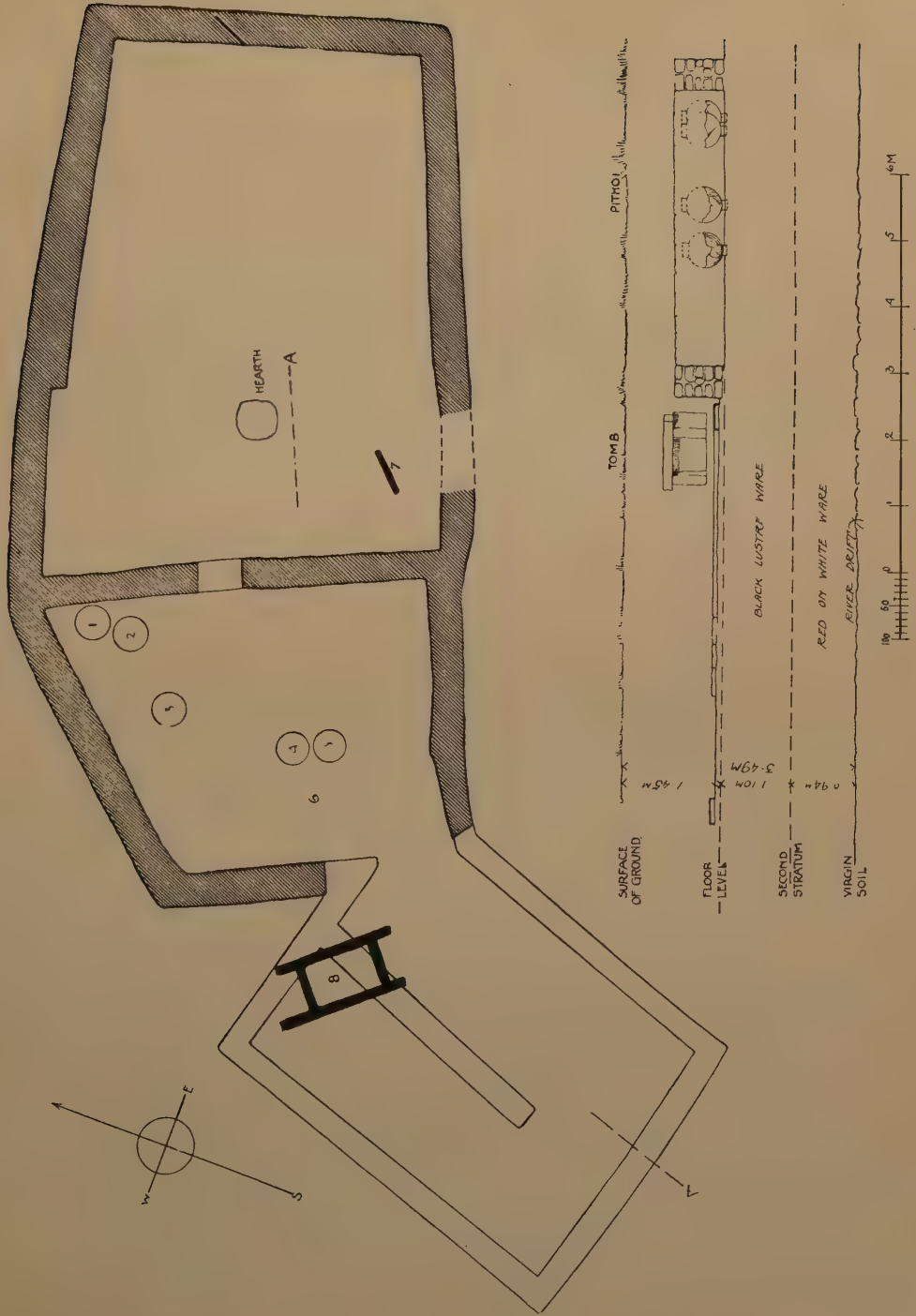
---

\* TSOUNTAS. *Αἱ προϊστορικαὶ ἀκροπόλεις Διμηνίου καὶ Σέσκλου*, p. 300, fig. 226.

† HOERNES. *Urgeschichte der bildenden Kunst*, p. 238, 65-6.

‡ SCHLIEMANN. *Ilios*, fig. 193.

§ HOERNES. *op. cit.*, p. 211, figs. 41-46. I am indebted to Professor Myres for this suggestion.



LIANOKLADHI: THREE-ROOMED HOUSE IN STRATUM III.

1-6. Large jars: No. 6 is broken.

7-8. Cist graves of later date, composed of stone slabs.





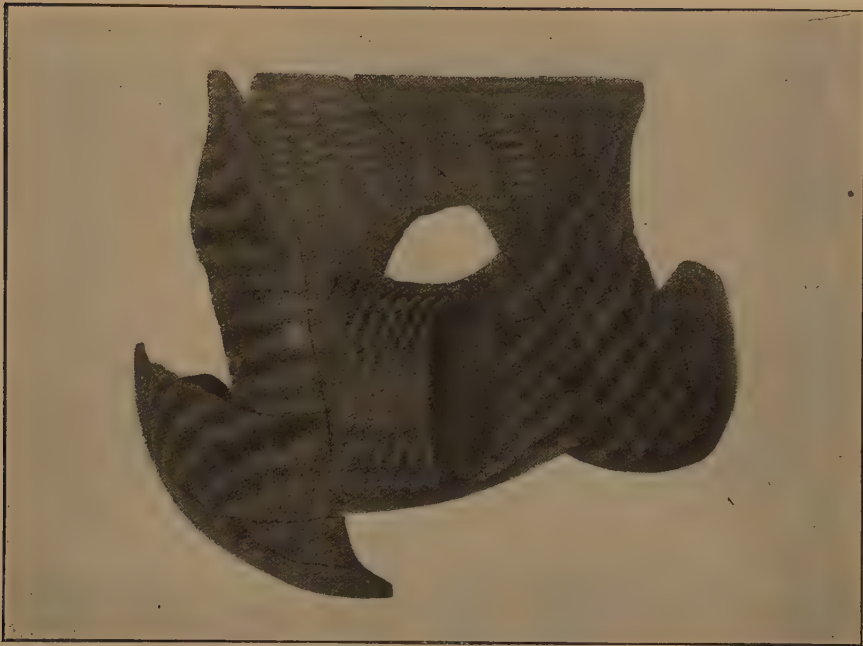


1. LIANOKLADHI: THE MOUND KNOWN AS 'PALEOMYLOS' SHOWS DARK IN THE MIDDLE DISTANCE

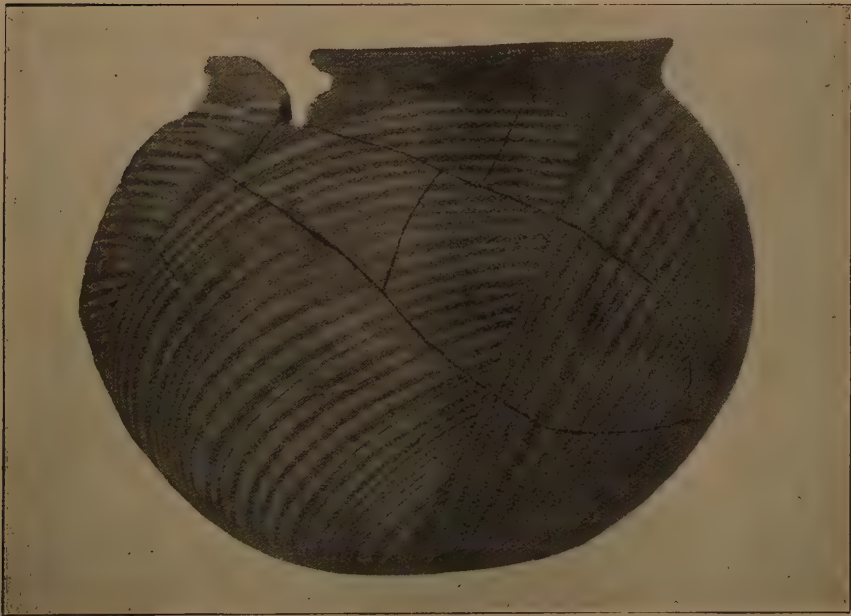


2. LIANOKLADHI: INTERIOR OF THE HOUSE IN STRATUM III, SHOWING 'PITHOI' IN POSITION.





1. LIANOKLADHI: RED-ON-WHITE WARE: BELL-SHAPED CUP.



2. LIANOKLADHI: RED-ON-WHITE WARE: LARGE-BODIED JAR.







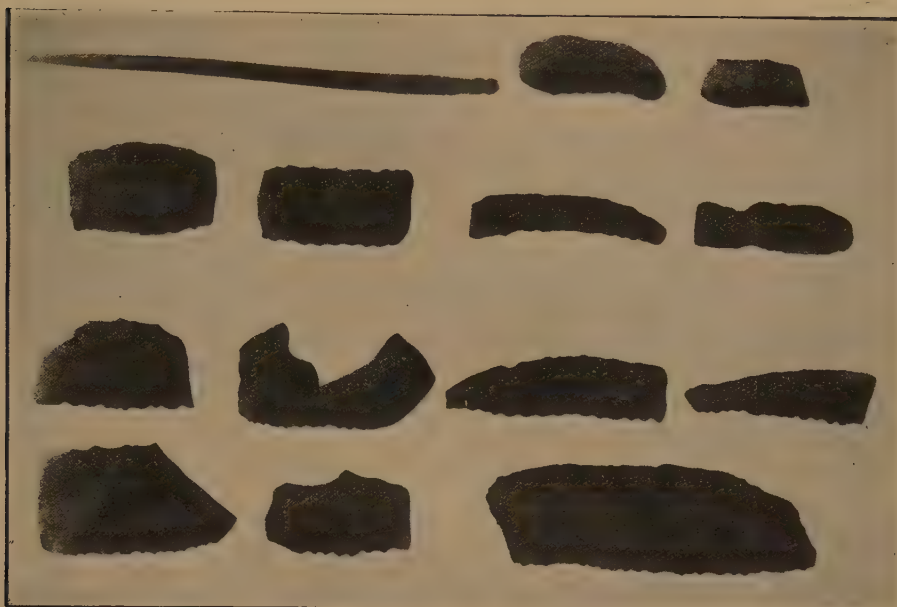
1. LIANOKLADHI: GEOMETRIC PAINTED WARE.



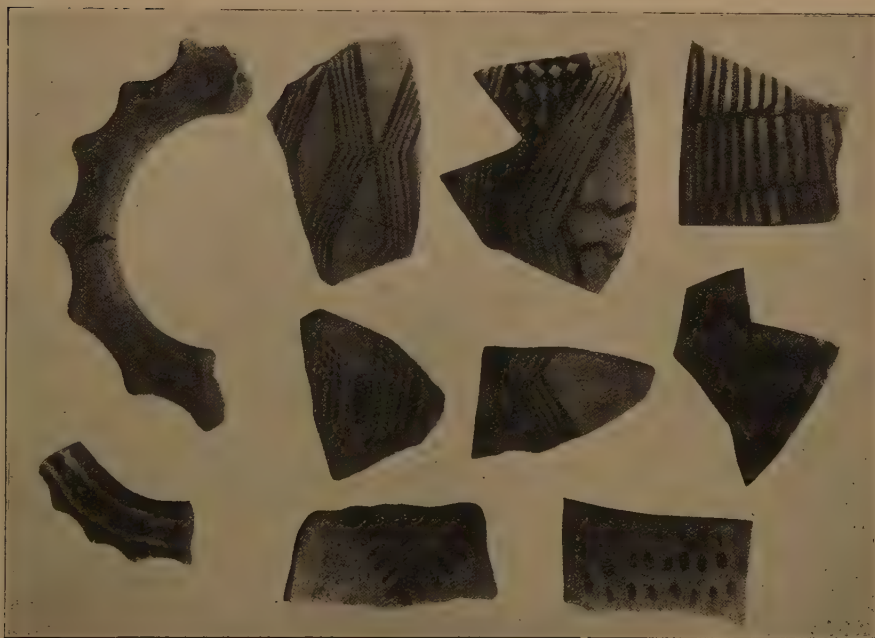
2. LIANOKLADHI: 'MINYAN' WARE: RING-FOOTED VASE, AND ANGULAR BOWL.



\*



1. LIANOKLADHI: SERRATED FLAKES OF FLINT, AND BONE PIN.\*



2. LIANOKLADHI: FRAGMENTS OF PAINTED POTTERY.







1



2

TSANI MAGHOULA: PRIMITIVE FIGURINE: (1) FRONT: (2) SIDE.



3. TSANI MAGHOULA:  
RED-ON-WHITE WARE:  
CUP WITH RIBBON HANDLE  
AND SOLID PATTERNS.

a



b

4. TSANI MAGHOULA:  
FIGURINE  
(a) FRONT  
(b) SIDE.



# EARLY CIVILIZATION IN NORTH GREECE: PRELIMINARY REPORT ON EXCAVATIONS IN 1909

BY A. J. B. WACE AND M. S. THOMPSON

WITH PLATES XXVIII-XXXIII

The sites chosen for this year's work were at Lianokládhi in the Spercheus valley, and near Sophádhēs in western Thessaly. In addition to actual excavation some time was spent in exploring the table-land of Othrys near Melitaea (Avaritza), and parts of Thessaly near Sophádhēs and Almyró. Most unfortunately Mr. Droop, who was a member of last year's expedition, was prevented from joining the expedition, and his loss was severely felt. But thanks to a grant from the British School at Athens, Mr. Peet came to our help for about five weeks, and most of the preliminary work on the pottery from Tsani Maghoula was done by him. On neither site did we employ more than twelve men, for wages were high owing to the harvest, and the average quality of the labour was not good. We are particularly indebted to Mr. Theodorátos, the owner of Tsani Maghoula, who lent us a house for our headquarters at the site, and gave us many other facilities; and our thanks are also due to Dr. Anagnostópoulos, Scholarch of Sophádhēs, and Mr. Saxónis, Schoolmaster of Lianokládhi, the Government Inspectors of our excavations.

## I. *Excavations at Lianokládhi*

The mound known as Paleómylos (Plate XXIX, 1) lies close to the left bank of the Spercheus, half an hour west of Lianokládhi, and opposite Neopátras, the ancient Hypate. The mound, which is about 200 metres long, and 140 metres broad at its greatest width, was tested by a series of shafts across its surface, all sunk down to virgin soil. These shafts revealed three clearly-marked strata, very sharply divided from one another. These it is of course possible to subdivide, but in the following account of the strata, only those subdivisions that are of any importance are indicated. The first and



lowest stratum, which rests on an undulating surface of river-drift, and in consequence varies in thickness from 0·94 to 3·55 metres, is marked by an abundance of fine pottery painted with elaborate red designs on a white ground. The patterns consist of waved and curved lines, painted so thickly over the ground as to hide it almost entirely. This is in strong contrast to the red-on-white wares of Thessaly\* and Chaeronea,† where most of the white ground is left plain, and the white slip is itself different. The two principal shapes of this ware are—(1) bell-shaped cups with a broad ribbon-handle placed half way down the side (Plate XXX, 1); (2) large-bodied, circular jars (Plate XXX, 2). In addition to these there are (3) fragments which seem to come from beaked jugs. These three shapes are certainly local, but with them is found a kind of plate, with a short foot, and patterns that recall Thessalian ware. Several fragments also show patterns similar to those common at Chaeronea.‡ But we cannot yet determine whether these wares are local or imported.

Certainly imported, on the other hand, are a few sherds of typical Thessalian red-on-white ware like that from Sesklo and Zerelia,§ and one piece of three-coloured ware.|| These show the parallelism between the painted wares of Thessaly and of Lianokládhi.

Further a marked degeneration was observed in the red-on-white ware towards the upper margin of this stratum. The painted ware becomes gradually coarser and rarer, and in contrast rough, unpainted, hand-polished pottery is commoner. A similar degeneration was noted in Thessaly at Zerelia.¶

Immediately above the first stratum follows the second, which is characterised by a sudden and complete change in the pottery. The new fabric is also hand-made ware, well baked, and of fine clay; but it has the outside washed over rather thinly with a semi-lustrous black paint. This ware, known to German archaeologists as

---

\* TSOUNTAS, *Αἱ προϊστορικαὶ ἀκροπόλεις Διμηνίου καὶ Σέσκλου*, pl. 15.

† SOTIRIADEIS, *Ἐφημερίς Ἀρχαιολογική* 1908, p. 71, figs. 4, 5.

‡ WACE, &c., *Liverpool Annals of Archaeology and Anthropology*, 1908, p. 125.

§ WACE, &c., *Liverpool Annals of Archaeology and Anthropology*, 1908, p. 123; *Annual of the British School of Archaeology at Athens*, xiv, pp. 203 ff.

|| TSOUNTAS, *op. cit.*, pl. 8, Nos. 3, 4, 5.

¶ WACE, &c., *Liverpool Annals of Archaeology and Anthropology*, 1908, p. 119.



traceable, is much destroyed. The west room is differently built, for its walls are only one course high and three stones thick. The whole upper structure, as in the rest of the house, consisted of wattle-and-daub, of which plentiful traces were found during the excavation. The west room seems earlier than the central, and we thus assume provisionally that the east and west rooms were originally separate huts, and later joined by the building of the central chamber. This then explains the peculiar plan, and the two periods of the east room, where the north wall was thickened and strengthened. The central and east rooms are joined by a paved doorway, inside which, in the east room, is an open hearth. In the central room we found six large stone jars still in situ (except one, which had fallen on its side: Plate XXVIII, Nos. 1-6) which were cracked and broken by the fire that destroyed the house. Around them lay masses of other vases, very much broken, including many painted specimens of the typical geometric ware of this stratum. Above the walls of the house we found a complete cist-tomb (8) containing only the skeleton of a youth buried in a contracted posture, and one slab of another, which occurs at (7), just where the south wall of the east room is badly damaged. In this third stratum, and in the house, were many fragments of the so-called 'Minyan' ware of Orchomenos,\* principally from ring-footed vases (Plate XXXI, 2). These give us a starting point for chronological parallels which we discuss below.

In the first and second strata we found several obsidian flakes, but none in the third; this, however, may be accidental. To the second and third strata belong a fine series of jagged-edged flint knives and saws (Plate XXXII, 1). Also in the house, with some of the flint knives, two bored celts were found which seem to indicate that the third stratum belongs to an eneolithic age.

## II. *Excavations at Tsani Maghoula*

The mound known as Tsani Maghoula† lies three-quarters of an hour east of Sophádhēs just to the north of the railway line, and about the same distance from the site of Kierium by Pyrgo. The

---

\* BULLE, *Orchomenos*, I, p. 73; SCHLIEMANN, *Journal of Hellenic Studies*, II (1881), p. 152; WACE, &c., *Liverpool Annals of Arch. and Anthropol.*, 1908, pl. L.

† TSOUNTAS, *op. cit.*, p. 15, fig. 3

mound is about 105 metres long by 73 wide, and is 8.50 m. high. We tested it by means of shafts sunk at its northern end. The largest shaft driven down on the north-east side struck virgin soil at a depth of 9.45 metres. Another sunk in the highest part of the mound reached the second settlement at nine metres, and as the first and second settlements in the large shaft are together over four metres thick, the deposit at the highest point of the mound must be about twelve metres thick. In any case it extends to a depth of four metres below the present ground level at the foot of the mound. As the shafts were sunk, successive horizontal layers of burnt rubbish, similar to those at Zerelia,\* appeared, which seem to mark the limits of settlements destroyed by fire. Taking these layers, which probably are the remains of wattle-and-daub huts, as convenient though perhaps arbitrary divisions, we divide the whole deposit into eight successive settlements or strata on which the following description of the finds is based.

The first settlement is divided into three periods, A, B, and C. In A the pottery is a hand-made and polished red-ware of good but thickish fabric, together with a little red-on-white ware. In B the latter ware is very plentiful: it is decorated with solid patterns of the pyramid and chessboard types, and the favourite shape is a bell-shaped mug with a wide ribbon-handle (Plate XXXIII, 3). In C this ware begins to give way to a new style ornamented with purely linear designs, while the mug becomes rare and the common shape is a wide open bowl like the usual shape at Zerelia and Sesklo.†

This is the typical ware of the second settlement, but with it the plain red hand-polished ware still continues in use. Towards the end of the second stratum two other wares appear, a thickish, well-baked, polished red ware decorated with linear patterns in black, and a fine silver-grey ware in which the usual shape is a mug similar to that described above, with linear designs in darker grey.‡

These last two wares are typical of the next or third settlement, in which the red-on-white pottery gradually dies out, and the plain

---

\* WACE, & CO., *Annual of the British School of Archaeology at Athens*, XIV, p. 201.

† TSOUNTAS, *op. cit.*, pl. 15, i.

‡ TSOUNTAS, who found this ware at Tsangli and Mesiani Maghoula, wrongly gives it to the Bronze Age, *op. cit.*, p. 243, Γ.1.β.



red-ware also disappears. The black-on-red ware mentioned is akin to, but different from, the well-known black-on-red Dimíni vases.\* Some have been found at Zerelia, and at the mound of Tsangli,† and it is common on prehistoric mounds in the plain between Phársala and Sophádhēs. With it, but towards the end of the third settlement we found some true black-on-red Dimíni ware,‡ obviously imported, and a few three-coloured sherds,§ but none of the chocolate-on-white Dimíni ware.§ Amongst these were one or two remarkable sherds painted in the three-colour style outside, and in the black-on-red Dhimíni style inside.

In the fourth settlement a few specimens of all three kinds of painted ware occur, but their place is taken by a hand-made and polished ware, red to blackish, which gradually becomes coarser, thicker and rougher in the succeeding settlements.|| In the same stratum, the fourth, we found a few sherds of white and pink encrusted ware, which Tsountas attributes to the bronze age.¶ Also in the fourth and fifth settlements we found a little black-lustre ware (*Ur-firniss*) like that from Lianokládhi, Orchomenos, and Tiryns. In this case it was probably imported from the south, perhaps from Lianokládhi.

In the remaining three settlements there is a steady degeneration of the coarse red-to-blackish ware just mentioned, and fragments of large rough bowls and store jars are very common.

Side by side with this degenerate ware, in the eighth stratum, we found several fragments of two-handled cups like those from Zerelia VIII,\*\* and a quantity of hand-made grey ware, which seems to be a local imitation of the 'Minyan' pottery at Orchomenos, and one or two pieces which are in all probability true imported 'Minyan.'

\* TSOUNTAS, *op. cit.*, pl. 8, 1, 2.

† Called Karabairam by TSOUNTAS, *op. cit.* p. 8, No. 38: the sherds are in the Almyro Museum.

‡ TSOUNTAS, *op. cit.*, pp. 222 ff, B.3.β, and B.3.γ. v. plates 6, 8 and 11.

§ TSOUNTAS, *op. cit.*, pl. 9.

|| This is TSOUNTAS' 'unpainted bronze age ware,' *op. cit.* p. 243.

¶ TSOUNTAS, *op. cit.*, p. 247, Γ.1.δ.

\*\* WACE, &c., *Liverpool Annals of Archaeology and Anthropology*, 1908, pl. L.

The following diagram explains the sequence of the various wares according to the different strata, and it will be seen that the black-lustre ware gives us a more or less fixed point for drawing chronological parallels between this site and the others previously excavated.

Settlements .....	IA	IB	IC	II	III	IV	V	VI	VII	VIII
Polished-red ware	■■■■■					●●●				
Red-on-white :										
Solid ...	●●	■■■■■	●●							
Linear..			●●●	■■■■■	●●●	●				
Black-on-red :										
Local ...				●●	■■■■■	●●				
Dhimini.					●●■■■■■	●				
Three-colour ware					●●	●●●●				
Grey-on-grey ware				●●	■■■■■	●●				
Black-lustre ware						●●●●	●●●●			
Coarse wares .....					●●	●●■■■■■	■■■■■	■■■■■	■■■■■	■■■■■
Encrusted ware ..						●●●				
Late grey ware ...									●●■■■	
Approximate dates }		2500 B.C.				2000 B.C.				1100 B.C.

DIAGRAM TO EXPLAIN STRATIFICATION AT TSANI MAGHOULA.

Throughout the eight settlements, obsidian knives and flakes were common, and stone implements (except celts) were not rare, but there were no new results of any importance. As regards the clay spindle-whorls, of which a great number were found, stratigraphical evidence shows that the drum and conoid shapes are later than the simple, flat type. We also found some fine bone pins and gouges in the first five strata,\* and in the first two some interesting terra-cotta statuettes (Plate XXXIII, 1, 2 and 4 a b).† The most remarkable find is a flat stone seal, with a cruciform pattern: it has a hole bored through a knob on top for suspension; this belongs to the second settlement.

The first four settlements are almost certainly neolithic, but the

\* Compare TSOUNTAS, *op. cit.*, pl. 45.

† Compare TSOUNTAS, *op. cit.*, pl. 32, Nos. 1, 6.

eighth and perhaps the seventh are, to judge by parallels from Zerelia, probably eneolithic, and as regards the fifth and sixth we have no evidence either way.

### III. *General Conclusions*

It will be seen from the accounts given above that at Tsani Maghoula, as at Zerelia,\* we have the steady degeneration of a neolithic folk who enjoyed a comparatively high culture. This degeneration begins at the end of the period of painted pottery, and it is noticeable that the mounds which stop at the end of this period are many, while those that continue are few,† such as Zerelia and Tsani. Some catastrophe seems to have overtaken this folk, either a conquest by aliens, or some natural calamity such as plague.

Further it is to be remarked that at Lianokládhi, just at the beginning of this degeneration of the red-on-white ware, the neolithic folk are replaced by the makers of the black-lustre ware (which is exceedingly rare in Thessaly), who seem to have come from the south from Orchomenos and Tiryns. The parallel is complete when we reflect that it is in the fourth and fifth settlements at Tsani, after the end of the painted pottery, that a few sherds of this ware are found imported into Thessaly. Thus we see that the neolithic folk who inhabited Thessaly, the Spercheus valley, Phocis and north Boeotia (for though the various red-on-white wares differ, they are nevertheless akin to one another) were encroached on from the south by the makers of the black-lustre ware, who reached as far as Mount Othrys. They did not hold their conquest long. At Orchomenos they gave way to the makers of the grey 'Minyan' ware,‡ and at Lianokládhi to a people who introduced the hand-made geometric ware described above. This latter people may possibly have entered Greece by the passes of Tymphrestus, since their pottery does not appear in Thessaly. But to judge by the many fragments of Minyan ware found at Lianokládhi, they were in close connection with the rulers of Orchomenos. This Minyan ware has been found in Thessaly at Zerelia, Seslo, 'Rini, Tsani, and

---

\* See *B. S. A.* xiv, pp. 197 ff.

† WACE, &c., *Liverpool Annals of Archaeology and Anthropology*, 1908, pp. 119 ff.

‡ Cf. BULLE, *op. cit.*, p. 57.

Tsangli,\* and in South Greece at Mycenae,† Markópoulo in Attica,‡ Tiryns, Aegina, and Phylakopí.§ Finally late Mycenaean pottery ('Late Minoan III') occurs in Thessaly at Dhimíni, Volo, Zerelia, Phársala, Lárissa, and Gonnos,¶ where it is often found together with eneolithic wares. Until the latter part of the Late Minoan period, then, Thessaly was separate from South Greece—perhaps the fall of the makers of the black lustre ware prevented it from coming under southern influence sooner—and then the great Mycenaean civilization from the south obtained a foothold there; without, however, even then displacing the existing population.

These are the main observations that present themselves as a result of a study of the parallelism of the stratification at the four principal sites concerned, which is here shown in tabular form.

Approximate Dates	TSANI	ZERELIA	LIANOGLADHI	ORCHOMENOS
1100 B.C.	VIII	VIII Late Minoan III	{ III Geometric and Minyan ware.	IV Late Minoan III
	VII	{ VII		{ III Minyan ware
	VI		{ VI	
	V } Black lustre ware.	V		{ II Black lustre ware.
2000 B.C.	IV	{ IV III II I	{ I Red-on-white ware.	
	III } Period of painted pottery.			
	II			
	Ic			
2500 B.C.	Ib	{ I	{ I Red-on-white ware.	
	IA			

DIAGRAM TO EXPLAIN SUGGESTED SYNCHRONISMS.

But this is merely a provisional attempt at synchronism, which is liable to alteration in the future, especially when the pottery from

\* WACE, &c., *Liverpool Annals of Archaeology and Anthropology*, 1908, p. 119.

† SCHLIEHMANN, *Mycenae*, p. 150, fig. 280.

‡ STAIS, 'Εφημερίς Ἀρχαιολογική, 1895, p. 216.

§ *Excavations at Phylakopí*, p. 154. London, Hellenic Society, 1904.

¶ WACE, &c., *B.S.A.*, XIV, p. 223; *Liverpool Annals*, 1908, p. 133 and Plate LI, 1.



Orchomenos and Tiryns is published. As the lowest date for the eighth settlement at Zerelia we take 1100 B.C., and the corresponding stratum at Tsani is probably of the same period. The Mycenaean sherds from Zerelia VIII are 'Làte Minoan III.' But the grey 'Minyan' ware (which at Zerelia occurs with the Mycenaean sherds, and at Markópoulo in what was apparently a Late Minoan III tomb) was found at Mycenae in the Fifth Shaft Grave, and, at Orchomenos, in a presumed Late Minoan II environment. Consequently no fixed date can be assigned to it, and it seems to have lasted a long time and to go back beyond 1400 B.C., the date now given to the end of Late Minoan II.\* Therefore we would prefer to give a wide general date, were it possible; but at all events we believe the eighth settlement at Zerelia and Tsani to be parallel with Late Minoan III. The approximate dates given to the other strata are entirely conjectural, and (we hope) err on the side of moderation.

Lastly it must be admitted that the fresh light thrown on the early culture of North Greece, and the separation of northern and southern Greece in these early days is exceedingly important to all students of the Homeric question. But though we must wait for further exploration before we can attempt even a provisional solution of the problems involved, we feel that for the present Mr. T. W. Allen's paper in the *Classical Quarterly*† serves as an indication of the lines we should pursue in such an enquiry.

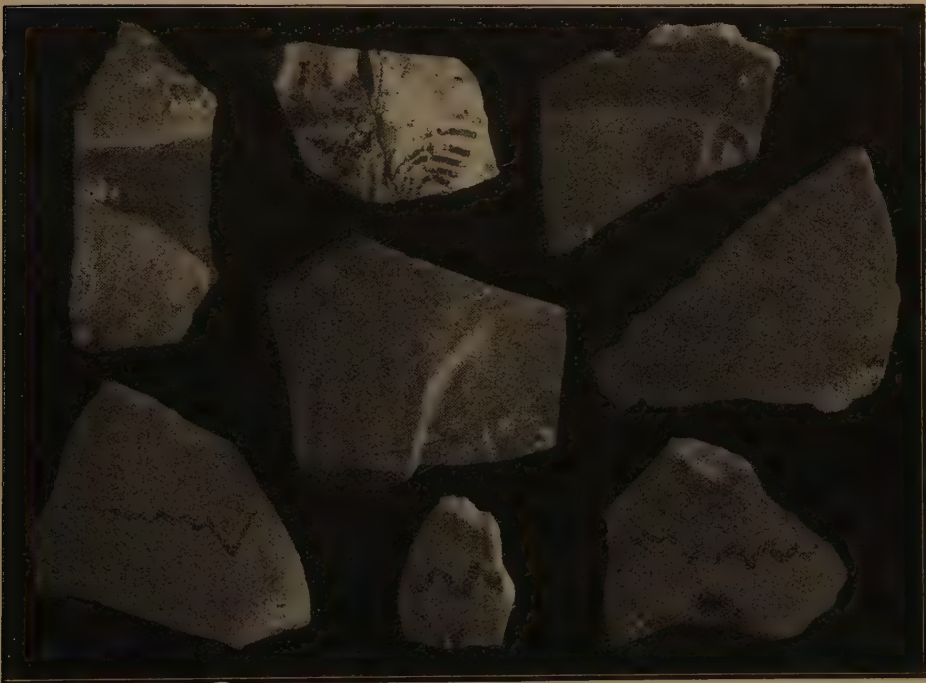
---

\* BURROWS, *The Discoveries in Crete*, 1907, p. 98.

† *Classical Quarterly*, 1909, p. 81.



1. MACEDONIAN MOUNDS: PRIMITIVE INCISED POTTERY.



2. MACEDONIAN MOUNDS: GEOMETRICAL PAINTED POTTERY.



# PREHISTORIC MOUNDS IN MACEDONIA

BY A. J. B. WACE AND M. S. THOMPSON

WITH PLATE XXXIV

This summer we undertook a short journey in Macedonia with the object of examining some of the mounds and tumuli in this province; in order to ascertain if the early pottery reported from this region has any connection with Thessalian. These mounds have already been explored by Col. Leake; by Dr. Kinch, and Dr. Struck, to both of whom we are indebted for valuable information; and by Dr. Traeger.\* The last-named has published a useful account of some of them, with drawings showing their shapes, and the pottery collected by him has been dealt with by Dr. Hubert Schmidt.†

## I. *The Mounds and their Distribution*

The mounds we have seen are those in the neighbourhood of Salonica, those at Pella, at Palatitsa near Berrhoea (Verria), and in the district of Pydna. We also examined the Pierian plain between Pydna and Tempe, but could find no mounds or tumuli there. These mounds, locally known as 'Toumbes' (τούμβες) fall into three main types, not two as Dr. Traeger has said. These types are as follows:—

*Type A.* Small, steep and conical, from forty to fifty feet high. These are presumably burial-tumuli, containing a built tomb. One of these, near Kitros by Pydna, was excavated by M. Heuzey,‡ who also found a somewhat similar one at Palatitsa,§ and Dr. Traeger notes that a tumulus at Pella seems to contain such a tomb. It is of course possible that some may have served as outlook stations.

*Type B.* Tall, steep and oval, also about forty or fifty feet high, with a flat top that varies in area. The smallest we measured was about 135 feet long by 60 feet broad. All these are prehistoric sites.

---

\* *Zeitschrift f. Ethnologie*, 1902, pp. 62 ff.

† *Zeitschrift f. Ethnologie*, 1905, pp. 91 ff.

‡ HEUZEY, *Mont Olympe*, pp. 172 ff.; *Mission de Macédoine*, pp. 243 ff., pls. 17-21.

§ HEUZEY, *Mont Olympe*, p. 200; *Mission de Macédoine*, pp. 226 ff., pls. 15, 16.



*Type C.* Tall, steep and large, with a flat top, the area of which is several acres. They are about forty feet high; and though irregular in shape are rather rectangular than oval or circular; some are more than a mile in circuit. These seem to be the sites of Greek towns.

The following is a list of these mounds and tumuli, divided according to types. There are probably many more than those here recorded.

*Type A.*

South of Salonica on the road to Vasiliká.

(1) and (2). On the left of the road not far from Salonica.

North of Salonica on the road to Langazá.

(3) and (4).<sup>\*</sup> On the right and left of the road just outside Salonica, near the barracks.

(5). On the left of the road not far from the top of the pass.

West of Salonica on the road to Pella (Ala Kilisa).

(6). On the right of the road near the military railway station.

(7, 8, 9). On the hill to the right of the road, not far beyond 6.

(10.) On the left bank of the Ghalliko, by the mills below Gradobor.<sup>†</sup>

(11). On the right of the road just beyond the Ghalliko.

(12, 13). On the right and left of the road near Kavakli.

(14). On the left of the road, to the west of Sarija and not far from the branch road to Berrhoea.

(15-20). Beyond the road to Berrhoea, between it and Pella, five on the right of the road and one on the left.<sup>‡</sup>

(21). At the spring of Banya.

(22). Chekmek Toumba, on the right of the road between Pella and Yenija Vardar.

In Southern Macedonia.

(23). Near Berrhoea; according to Traeger, it belongs to this class.

---

<sup>\*</sup> One of these is probably Dr. TRAEGER's fig. 1.

<sup>†</sup> TRAEGER, *op. cit.*, fig. 8: he wrongly places it on the right bank.

<sup>‡</sup> Two of these are Dr. TRAEGER's, figs. 3 and 4; cf. STRUCK, *Makedonische Fahrten* II, p. 85.

- (24). At Koutles (Palatitsa); this is of a slightly different type, and has a sinking on top.\*
- (25, 26). On the boundaries of the farms of Kitros and Elefterochori.
- (27). Between Kitros and the sea.
- (28, 29). South of Kitros; one of these was excavated by Heuzey.†
- (30). South of Katerini near Stipi.
- (31). Near Karista.

*Type B.*

On road from Salonica to Vasilika.

- (32). At A. Elias, just outside Salonica; we were told that the subterranean passages mentioned by Dr. Traeger were dug by treasure seekers.‡
- (33). A small one close to the agricultural college.
- (34). Close to the farm of Sedes.
- (35). Near Mejarli.
- (36). By the baths of Sedes, not explored.

On the road from Salonica to Langazá.

- (37). Karaïssi Toumba at Platanaki.§
- (38). At Sarach.
- (39). On the left of the Salonica-Serres road near Guvezhne, about an hour north of 38.

On railway from Salonica to Serres.

- (40). At Arapli, very small.
- (41). On the left bank of the Ghalliko by the mills below Gradobor.
- (42). On the right bank of the Ghalliko near Salamanli station. Numbers 33 and 40 are certainly prehistoric sites, but were perhaps later converted into tumuli of type A.

---

\* STRUCK, *op. cit.*, p. 46.

† TRAEGER, *op. cit.*, fig. 2.

‡ TRAEGER, *op. cit.*, fig. 7, p. 69. There is no flat topped mound in connection with it as he imagines.

§ TRAEGER, *op. cit.*, p. 68.

*Type C.*

On the road from Salonica to Vasilika.

(43). At Sedes.

On the road from Salonica to Langazá.

(44). At Platanaki.\*

On the road from Salonica to Pella.

(45). On the right of the Ghalliko near Sari-Umer.

(46). Ingliz Toumba, on the left of the road near the right bank of the Ghalliko.†

(47). By the station of Topji (Topsin).‡

On the railway line from Salonica to Serres.

(48). On the left bank of the Ghalliko by the mills below Gradobor; the cone at the south end of this seems to be natural.§

(49). On the right bank of the Ghalliko near Narash.

## II. *The Prehistoric Mounds of Type B*

These mounds, like the Thessalian, are composed of the débris of successive settlements built one above another. At Salamanli (41) half the mound has been cut away by the river, so that it can be seen in section. This shows that there are about fifteen feet of prehistoric deposit on an isolated natural rise about twenty-five feet high. If we assume that the other prehistoric settlements were built on similar rises, it explains their great height and the steepness of their sides. It is impossible without excavation to attempt any chronological arrangement of the pottery picked up on the surface. In general, plain ware seems to be commoner than painted; at Salamanli, for instance, we could find no painted sherds at all. The principal types of pottery on these mounds are as follows:—

(1). *Plain wares, hand-made.*

(a) Coarse, thick, reddish ware with a rugose surface. This is common on all sites, and at Salamanli could be observed both in the top and at the bottom of the prehistoric deposit.

---

\* TRAEGER, *op. cit.*, fig. 5.

† TRAEGER, *op. cit.*, fig. 6: he has confused the right and left banks of the river he places 10 and 48 on the right bank, and 46 on the left bank.

‡ TRAEGER, *op. cit.*, p. 65.

§ TRAEGER, *op. cit.*, fig. 9: wrongly placed by him on the right bank.

(b) Fairly well made ware varying in colour from yellow-brown to dark-brown and reddish. The shapes of this ware are not known, but the types of the handles have been illustrated by Schmidt.\*

(2). *Decorated wares.*

(a) Hand-made, incised pottery. The patterns seem as a rule to be geometric; triangles and lozenges occur fairly frequently, and the fragments we possess (see Plate XXXIV, 1) are sufficient to show its differences from certain other wares, though the full scheme of decoration is not known.

(b) Hand-made painted pottery with brown violet decoration on a brown polished surface. The fragments are too small to show the complete patterns, but those on Plate XXXIV, 2, illustrate portions of them.†

(c) Painted ware with black decoration on a reddish surface. Some of the pieces seem to be wheel-made, though most is hand-made; the patterns are apparently geometric.

(d) Imported Mycenaean ware (Late Minoan III); we found this at Nos. 33 and 40, and a doubtful piece at No. 37.‡

(e) Wheel-made geometric pottery with red-brown paint on a cream or buff ground. The surface is not smooth. The patterns, such as concentric circles, are those of ordinary Greek geometric pottery, of which this is probably a local variant. A few pieces, that more closely resemble Greek geometric ware, have a smooth surface and fine reddish clay, and are also probably local. Dr. Schmidt, however, seems to think all this ware imported.§

At No. 40 we found a flint knife, at No. 33 an ordinary celt, at Nos. 36 and 37 fragments of bored celts, and at No. 36 a fragment of a bronze tool.

The incised and painted wares described above are quite unlike any of the Thessalian. But some of the types of the handles of the plain ware are the same as the pottery classed by Tsountas as Γ3.|| In Thessaly several kinds of painted pottery are common, while

\* *Op. cit.*, p. 98, figs. 6 ff.

† SCHMIDT, *op. cit.*, p. 103, concludes that this is local.

‡ TRAEGER also found some; SCHMIDT, *op. cit.*, figs. 82, 83.

§ SCHMIDT, *op. cit.*, p. 108.

|| TSOUNTAS, *Αἱ προϊστορικαὶ ἀκροπόλεις Διμηνίου καὶ Σέσκλου*, pp. 271, 373.



incised ware is rare; but in Macedonia the reverse seems to be the case. Further it must be noted that no prehistoric sites have yet been reported in the coastal plain north of Tempe, or by Pydna, Berrhoea, or Pella, so that there is a geographical gap between Thessaly and Macedonia. It is too early to compare the Macedonian fabrics with those of Thrace or Troy, though there may be a likeness between them, as suggested by Dr. Schmidt.

### III. *The Flat Greek Mounds of Type C*

The most noticeable features of these are the enormous area of the flat tops, and the wide sloping paths that lead up their steep sides at rare intervals.\* On them we found a few sherds of plain prehistoric ware (see above (1) *b*), and a good deal of the peculiar geometric ware (see above (2) *e*). But the commonest ware is ordinary plain wheel-made ware that can belong to any period. Good black-glazed ware of the fifth century is not rare, and fragments of Megarian bowls and other Hellenistic fabrics occur. We suggest, therefore, that these large mounds are the sites of Greek towns, and that the sloping paths indicate entrances. It is probable that they date from an early period,† on account of the geometric ware, and in some cases they seem to cover prehistoric sites, but their *floruit*, to judge by the black-glazed and Hellenistic wares, was the classical period. It is said that the mound identified as Olynthus is of this type. The excavation of one of them should show important stratification.

---

\* A. KOERTE (*Gordion*, p. 8) thinks that the mounds of Type A are family burial places, a view that is probably correct; but anyone who has explored the mounds of type C will see that his idea (that these are general cemeteries) is wrong, and that Dr. TRAEGER was right in considering them as inhabited sites.

† Cf. TRAEGER, *op. cit.*, pp. 71 ff.



1. JERABLUS: ACROPOLIS: SLAB No. 1.



2. JERABLUS: ACROPOLI : SLAB No. 3.

(Slab No. 2 (the Winged Female Figure) is illustrated in the text, p. 170.)





1. JERABLUS: ACROPOLIS: SLAB No. 4.



2. KELLEKLI:  
STELA No. 1.



3. KELLEKLI:  
STELA No. 2  
FACE 1.



4. TELL AHMAR:  
STELA B.







1. TELL-AHMAR: WINGED LION WHICH FLANKED THE WEST SIDE OF ONE OF THE CITY GATES.



2. TELL-AHMAR: PORTION OF THE WINGED LION WHICH FLANKED THE EAST SIDE OF THE GATE. THE PHOTOGRAPH SHOWS THE CUNEIFORM INSCRIPTION ON ITS BODY.





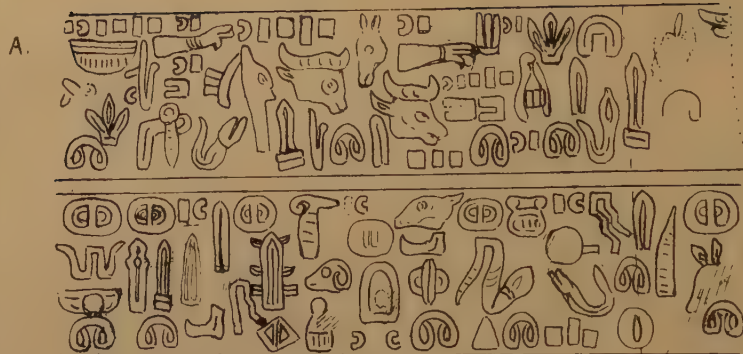


FACE 4.

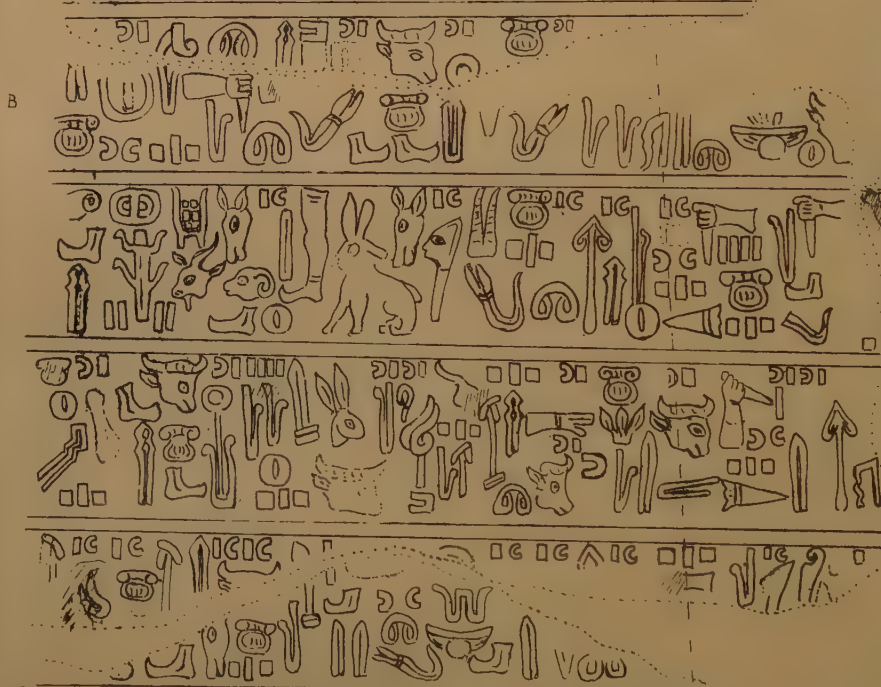
FACE 3

FACE 2

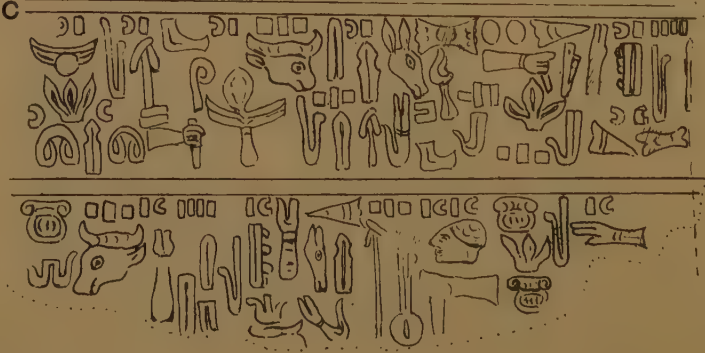
A. Elbow of Human Figure.



B. Legs of Human Figure.



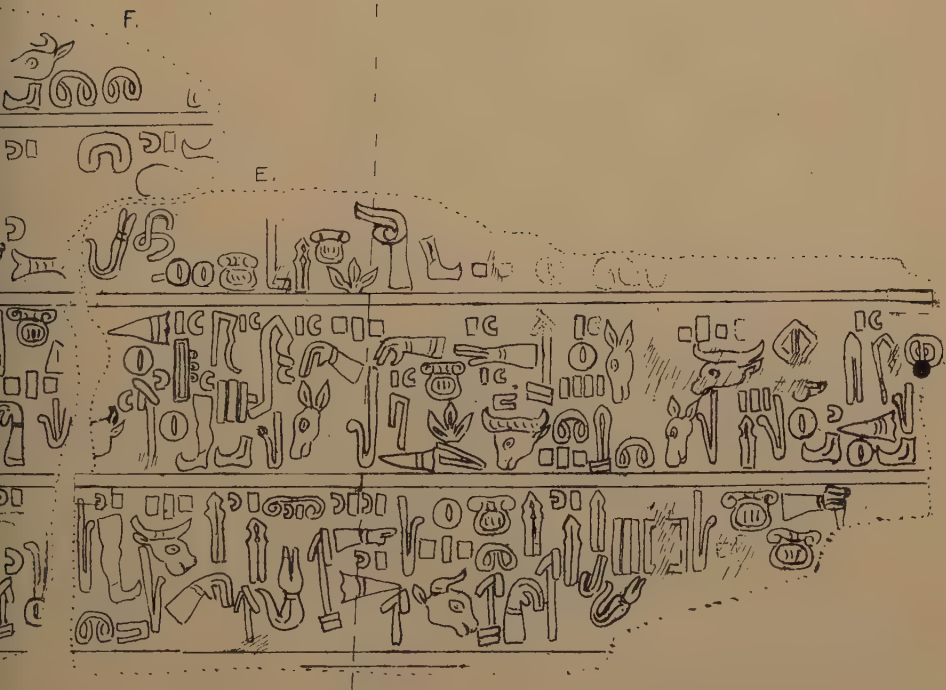
C. Figure of Bull.



TELL AHN  
T  
IN

PLATE XXXVIII.

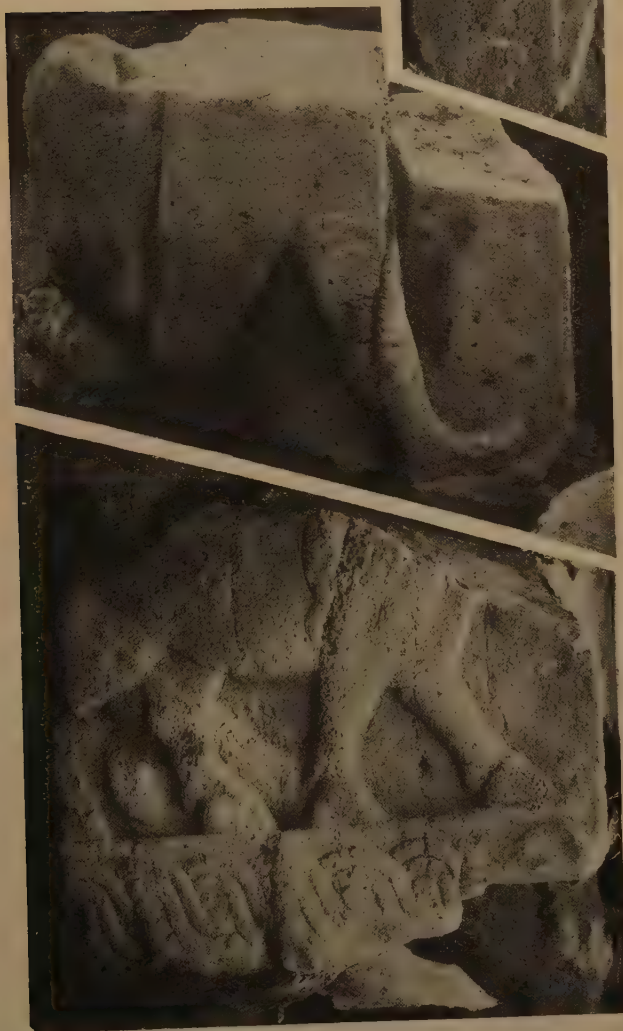
FACE 1.



ELA C: HITTITE INSCRIPTION ON FACES 1, 2, AND 3:  
 EF ON FACE 4 IS SHOWN ON PLATE XXXIX, AND THE  
 O FACE 3 OF FRAGMENT B ON PLATE XL, 1.



TELL-AHMAR: STELA C: THE  
THREE FRAGMENTS OF THE  
SCULPTURED FACE 4 OF THE  
STELA ARE HERE SHOWN  
IN APPROXIMATE RELATIVE  
POSITIONS.



FRAGMENT A, showing also inscribed face 3.

FRAGMENT B.

FRAGMENT C.

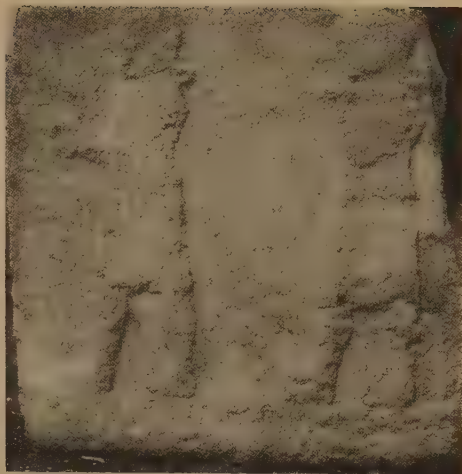
TELL-AHMAR: STELA C.







1. TELL AHMAR: STELA c.  
INSCRIBED FACE 3 OF FRAGMENT B.



2. TELL AHMAR: SLAB d 4.  
TWO PROCESSIONAL FIGURES.



3. TELL AHMAR: SLAB d 1.



4. TELL AHMAR: SLAB d 6.





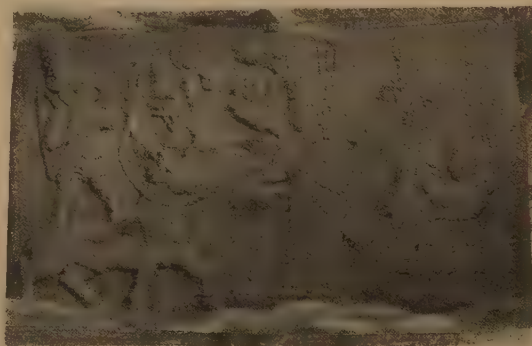
1. CHARGING BULL.



2. CF. *ANNALS* I, PL. IV, LOWER PART.



3. CF. *ANNALS* I, PL. V, LOWER PART.



4. CF. *ANNALS* I, PL. IV, UPPER PART.



5. LEFT HAND END OF SLAB 4. SEE FIG. 3.



6. CF. *ANNALS* I, PL. V, UPPER PART.

SCULPTURES FROM ARSLAN TEPE, NEAR MALATIA.



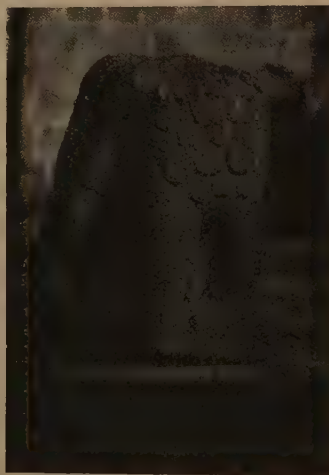




1. ALEPPO: LION IN BLACK BASALT: IN THE CASTLE.



2. ALEPPO: BASALT STELA IN THE  
COLLECTION OF M. MARCOPOULOS.



3. ALEPPO: EAGLE IN BASALT:  
IN THE FRENCH CONSULATE.

HITTITE MONUMENTS AT ALEPPO.



## CARCHEMISH AND ITS NEIGHBOURHOOD

BY D. G. HOGARTH


WITH PLATES XXXV-XLII

I. *Jerablus*

In the middle of March, 1908, I left Aleppo for the well-known site at Jerablus (or Jerabis), being accompanied by Mr. Richard Norton, late Director of the American School of Classical Studies in Rome. We chose the route *via* Mumbij, and both there and on the road found certain unrecorded remains of antiquity which I have published in the *Annual of the British School at Athens*, Vol. XIV (art. *Hierapolis Syriae*). From Mumbij we descended to the Sajur River in two hours, and having forded it near the village of Chat, about five miles above its confluence with the Euphrates, rode due north over down-like uplands for  $2\frac{1}{2}$  hours to a small Turkman village, Amáni, which is about three miles west of the Euphrates, and at the extreme southerly point of the fertile plain of Jerablus. The acropolis of the latter place rises conspicuous at a distance of about four miles as the crow flies: and close to Amáni itself is a smaller artificial mound of the same steep flat-topped type, called Tell-el-Ghranim, evidently the survivor of a town which once commanded the two passes by which the Jerablus plain is entered from the south. We were compelled by rain and the late arrival of our baggage train, which had taken an easier western road from the Sajur, to stay the night at Amáni in the house of Tahar Bey; during this halt I purchased from the villagers a few small objects said to have been found on the summit or slopes of Tell-el-Ghranim. These were a haematite cylinder, finely engraved with a scene of heroes and lions in combat, in good Assyrian style, which was, unfortunately, lost at a later stage of the journey, and three other seals of Hittite character.



(a) *The Site*

The site known as Jerablus, or Jerabis,\* lies at the extreme northern limit of the plain, on the first slope of a low spur which runs down to the Euphrates from high ground on the west. This spur is about three miles broad. It rises higher to the north of Jerablus, forming a long cliff which breaks down to the Euphrates; but lower ground was chosen for the site, because a little stream, which has cut a deep way to the Euphrates, affords protection on the north side. The Acropolis is bowed out into the Euphrates and washed by it for nearly half its circumference. On the land side the city was fenced by walls, which now appear as long mounds, on an average about fifteen feet high, and form a horse-shoe some 600 metres in longest diameter, north to south, and 400 metres west to east. The northern horn of the wall met the Acropolis and the river simultaneously: the southern horn runs down to the river some distance south of the Acropolis, and the intervening length of bank shows abundant traces of quays, from which stairs descended at intervals to the water. Where the wall abutted on the river, and for some distance on either hand of the abutment, a massive revetment of masonry lined the bank. Much of this remains in good order, being formed of roughly squared blocks, which in some instances are keyed one into another, thus . Although showing signs of later patching, this revetment appears for the most part to be of very ancient construction. There are two conspicuous gaps in the city wall, which undoubtedly mark the position of main gates on south and west. In the first gap appear the foundations of a tower of late period. I think that the position of two smaller gates on the S.E. and N.W. respectively, can also be made out. There are traces of causeways approaching both the main gates, and beside that which leads to the South Gate are the

---

\* Jerabis is the Arab name, Jerablus the Turkish. The latter is the official name, and the most used even by the Arab-speaking villagers of the immediate neighbourhood. Turkish speech begins two hours north at Kellekli, and I believe that even the Jerablus peasants are in the main Turkoman. I failed to find anyone either on the spot or at Aleppo, Birejik, and Aintab, who regarded one name as right and the other as wrong. Both have been in use as far back as memory runs. I entirely disbelieve the suggestion often made that *Jerablus* is a modern invention due to the villagers having been taught that the place was once called *Hierapolis*. The hard initial J-sound renders this most unlikely, and *Jerablus* has probably nothing whatever to do with *Hierapolis*, which lay many miles away.

remains of late sarcophagi and altar-tombs. This *via sacra* led doubtless to Hierapolis, and ultimately to the early city at Aleppo (Assyr. *Halman*). The western causeway must have run towards Tell-Bashár (see later, p. 174 ff).

Once within the South Gate the visitor sees before him the outlines of a broad street, with colonnades on either hand, running straight towards the south-eastern butt of the Acropolis. These remains, together with all others visible on the superficial level within the walls, are apparently of post-Christian date. They cover thickly the southern half of the site, but are more sparse on the northern part. Nearer the Acropolis, foundations of large public buildings remain; but, without excavation, their precise plan and nature cannot be determined. A capital from the main colonnade lies on the surface, to the south of the street, about half-way. It shows that the architecture was of neither early date nor sumptuous character. The only distinctive sherds we could find were red 'Samian.' Half-a-dozen blocks with egg-and-dart moulding of late style lie on the Acropolis mound near its eastern foot.

#### (b) *The Ancient Name of the City at Jerablus*

It is clear that a town of some importance occupied this site in Christian times. Was it the Syrian *Europus* (or *Oropus*) which is usually placed here?\* The various authorities who mention this latter town (Appian, *Bell. Syr.* 57; Lucian, *Quomodo hist. scr.*, 24 and 28; Ptolemy, *Geog.* V, 14; Pliny, *N. H.* V, 24; Steph. Byz. *U.cc.*; Hierocles, *Synec.* 713, 11; Procopius, *Bell. Pers.* II, 20, and *De Aedif.* II, 9; and, doubtfully, Polybius V, 48) give no nearer clue to its position than that it lay on the Syrian bank of the Euphrates, south of Zeugma (Birejik), and at no very great distance from Hierapolis (Mumbij). If the unnamed station, marked on the Peutinger Table next below Zeugma on the right bank road down stream, be (as is usually assumed) *Europus*, and if we could trust the Table's numerals, we should not place this town at Jerablus; for the distance from Zeugma is given as xxiii Roman miles, equal to the distance given for the interval between Zeugma and

---

\* E.g., without query in Kiepert's latest map. Cf. W. Max Müller, *Asien u. Europa*, p. 268.

Hierapolis.\* Jerablus is only between 15 and 16 English miles from Birejik. By the Table's reckoning, the site of Europus should lie at the mouth of the Sajur, where, in fact, are a number of rock-cut graves of Roman date and other traces of an ancient settlement. In that case, the next town on the Peutinger road, *Caeciliana* (Καικιλία, Ptolemy; *Ceciliana*, Anon. Ravenn.), marked as situated xvi Roman miles to the south, would occur in the very likely vicinity of Kalat-en-Nejm, where was the great mediaeval ferry, protected by the remarkable castle still standing.

Procopius alone, if pressed, affords a little further light. He relates that Belisarius, who had posted from Constantinople to the front in Euphratensian Syria in the year 542, was met, on nearing Hierapolis, by a letter which so incensed him that he turned off to Europus . τὸ χωρίον . . . ὃ πρὸς Εὐφράτῃ ποταμῷ ἐστίν. There he fortified a camp, to which he summoned the faint-hearted notables of Hierapolis. These presently arrived, leaving only garrison enough behind them to hold the walls. At Europus Belisarius received an embassy from Chosroes, and thence ultimately he crossed Euphrates and marched to Edessa (Urfa). Procopius gives no details of Belisarius' road to Hierapolis, but it may be doubtfully inferred, from his subsequent narrative, that Belisarius, while he did not go very far away from Hierapolis, intended to establish himself *nearer* to Chosroes when he went on to camp at Europus; and further, that this latter place had some relation to Hierapolis as its port, or river settlement (τὸ χωρίον κ. τ. λ.). If so, then the mouth of the Sajur, which is the nearest point on the Euphrates to Hierapolis, is a more probable spot for Europus than the site of Jerablus, some 20 miles north. The main ancient road from Hierapolis to Edessa crossed Euphrates at the Sajur mouth, as we know from the journey of the pilgrim Etheria (or Egeria, or Eucheria), who relates how, having left Hierapolis, she came in the name of God to the Euphrates at the 15th milestone. No point on the river is so little as 15 Roman miles from Hierapolis, except the

---

\* This last numeral is obviously wrong. The true distance is just about 34 Roman miles. Probably an x has dropped out. But if Europus was at the Sajur mouth the xxiii of the Table gives the right distance from Zeugma, and the xxiii given as the distance from Hierapolis and Caeciliana is not far out, if the latter were on the bank a little south-east of Kalat-en-Nejm.

Sajur mouth. This same road now carries the main traffic from Aleppo, *via* Mumbij, Tell-Ahmar and Seruj, to Urfa.

On the whole, therefore, Procopius so far supports the Peutinger Table that I incline to place Europus at the Sajur mouth, and discredit its identification with Jerablus. That the modern name of the latter site can be a phonetic descendant of Europus seems precluded by the hard initial *j*. Both Maundrell, who wrote *Yeraboloos*, and those who have written *Yerabis*, have been distorting the true initial sound under the influence of the theory which would identify the place with either Hierapolis or Europus. What, then, are we to call the later town whose remains appear at Jerablus? It is tempting to find its name in the passage of Ammianus Marcellinus (xiv 8) which runs 'Commagene nunc Euphratensis clementer adsurgit Hierapoli, *Vetere Nino*, et Samosata, civitatibus amplis illustris.' But the possibility, nay, probability, that *Vetere Nino* is here intended as a synonym for Hierapolis, and the absence of all other mention of a distinct Syrian city of that name, forbid us to press the identification. In Hierocles' list, which begins from the north and keeps to the right bank of Euphrates, the name next before Europus is Σύριμα; but this seems to be the same place as Ptolemy's Οὔριμα, which occurs in a description beginning from the north before Ἀρουλῖς (mod. *Arul* on the Nizib-Aintab road) and Zeugma. If so, Σύριμα could hardly be placed so far south of Birejik as Jerablus. In fact, if the latter site be not that of Europus, I confess I can suggest no other known Graeco-Romano-Syrian name for it; and the lack of an alternative is the main, indeed to my mind, the only, argument in favour of its identification with Europus.

#### (c) *Hittite Monuments at Jerablus*

It is not till the foot of the Acropolis mound itself is reached that any more archaic remains are seen. The visitor comes suddenly on a T-shaped excavation, and sees at the bottom of it (1) an upright sculptured slab, bearing a relief of two male figures standing on the back of a crouching lion (Plate XXXV, 1). It is important to note that this slab stands squarely on a plinth, and therefore is apparently in its original position. The top of the plinth lies a



little over two metres below the lowest foundation course of the nearest late building, which is exposed in section on the side of the trench. The top of the slab does not reach the level of this later foundation by nearly a metre. A long trench runs away east from this slab towards the river, and is said by the local peasants to have been dug by a 'pasha' thirty years ago as a road for the transport of the slab to the stream; but the project, say they, was abandoned owing to the weight of the monument.

(2) In the irregularly shaped stem of the **T** excavation, which runs up the face of the Acropolis mound, lies a broken relief of a winged female figure grasping her breasts (fig. 1).



FIG. 1. JERABLUS: WINGED FEMALE FIGURE FROM THE ACROPOLIS.

*Drawn by F. Anderson from a photograph.*

(3) Near it lies a broken basalt slab, shewing the lower half of a draped male figure moving to the right and carrying in his left hand a censer (Plate XXXV, 2). This slab leans against the side of the trench.

(4) A fourth sculptured slab has been drawn out, and lies in

pieces on the surface to south of it. This shows the lower parts of two figures moving to left, of which the foremost, who wears the Hittite shoes, is in very good style (Plate XXXVI, 1).

These four slabs have long been known\* and recognised as part of the 'Hittite' group, discovered during the British Museum excavations of 1876-9, of which several pieces are in London. Those still on the site show no hieroglyphic writing. There are two other small basalt fragments of the same class lying on the surface at the eastern foot of the Acropolis, and nearer the river. Both show bits of drapery. I reproduce the four main slabs, since, to my knowledge, they have never been adequately published from good photographs, but the condition of No. 2, and the position in which it lies, preclude a good photograph.

There is nothing on the slopes of the Acropolis mound of any significance, and the summit is a long and narrow grass-grown table about 150 × 30 metres, on which a few late limestone blocks lie half embedded. Some of these show signs of having been re-used; and probably a mediaeval fortress, similar to, but smaller than, that on Tell-Bashár (see later p. 175) stood here. Near the north end an excavation about three metres deep has been cut right across the summit. Its bottom and sides are of soft earth, and show in section nothing but a few coarse potsherds.

It seems probable that, where the sculptured slabs are, part of an early approach to the Hittite palace on the Acropolis has been revealed. This was flanked with reliefs like the approach to the Sphinx Gate at Eyuk in Cappadocia, or the approach to the Palace at Sinjirli. But it is also possible that the Palace stood lower down, and has been covered up by *talus* from the mound, when it was enlarged at some later date, e.g., by mediaeval builders. In this case, the excavators of thirty years ago dropped into one of its halls, and exposed part of its dado. It looks as if a 'Hittite' stratum is to be expected all over the lower part of the site at about two metres lower than that of the Graeco-Syrian foundations. Though I could find in the hands of the villagers of Jerablus-el-Foqâni, the nearest settlement, only a Hittite scaraboid and some beads, there

---

\*See e.g. PIERROT and CHAPIEZ, *Hist. de l'Art dans l'Ant.*, vol. iv, p. 549 (fig. 276=No. 1 here); p. 808 (fig. 390=No. 2); p. 809 (fig. 391=No. 4).

is not the slightest doubt, of course, that Jerablus is a most important Hittite site. If, as the decipherers of cuneiform records (e.g., those of Salmanassar II) tell us, Carchemish was on the west side of Euphrates, and north of the Sajur mouth, there can be little doubt that it was at Jerablus. If, further, as the relief of Sargon at Balawat indicates, it was right on the bank of a great river, the last doubt vanishes. There is no other site which fulfils all these conditions, and at the same time answers to the requirements of the Hebrew and Egyptian references to Carchemish.

A Syrian at Jerablus-el-Foqáni gave us two valuable pieces of information. First, that there were 'black written stones' at the village of Kellekli, which lies two hours northward on the road to the ferry of Birejik; second, that writing 'like nails' was to be seen at Tell-Ahmar, on the farther bank of Euphrates, opposite the mouth of the Sajur. On our way to verify the first item, we noted remains of many late uninscribed sarcophagi and altar tombs, on the summit of the slope north of the stream which flows into Euphrates beside Jerablus. We were also guided to an empty chamber-tomb of late Syrian form, about a mile north-west. These graves show the situation of the Graeco-Syrian cemeteries. Arrived at Kellekli, near which and by the bank of the Euphrates, rises a small flat-topped mound, we saw (1) the *stela*, figured on Pl. XXXVI, 2, lying at the entrance to the village. It is of black basalt, and measures 1.15 × .40 × .24 m. The feet of the figure are broken, but the tips of upturned shoes are visible. Ten minutes to the north of the village, on a low rise, is lying (2) a second *stela*, also of black basalt, and broken both above and below; the remaining part shows the lower halves of two figures opposed. That on the left hand wears a tunic to the knees, that on the right, drapery to the ankles. Beneath the figures is a band of rope moulding, and below this again a four line text in relief running round three sides of the *stela*, and beginning evidently on the spectator's right. The middle of the text on the front of the *stela* is almost completely effaced by wear (the stone seems to have been used as a threshold), and I could make out no more than a few doubtful symbols in the third line. The sides are in better condition. Owing to extreme humidity, our squeezes would not dry, and having been taken off wet, were subsequently badly crushed. I subjoin a hand-copy of the text, made partly on the

spot, partly from the squeezes while fresh (fig. 3: compare the photograph of face 1 in Pl. XXXVI, 3). The memory of the villagers did not go back to the discovery of these *stelae*, and no one

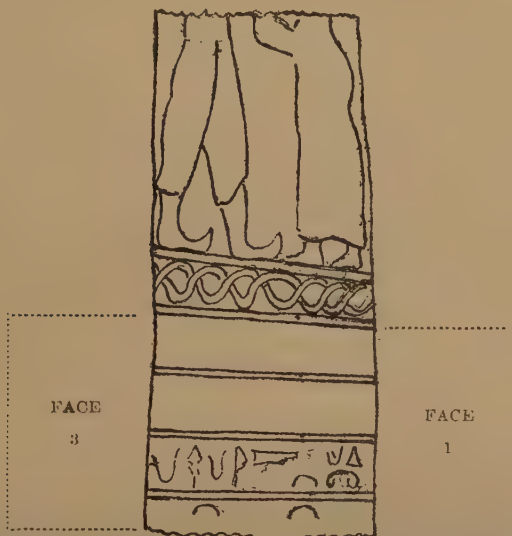


FIG. 2. KELLEKLI: HITTITE STELA No. 2: FACE 2 WITH INSCRIPTION AND SCULPTURED FIGURES.

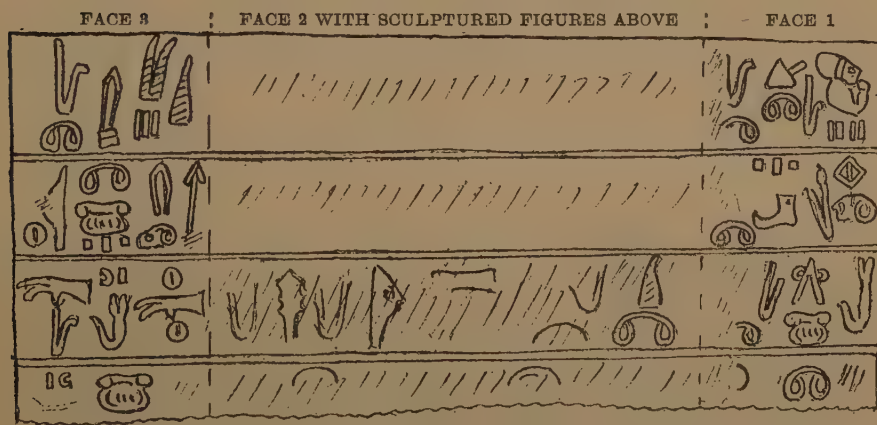


FIG. 3. KELLEKLI: HITTITE STELA No. 2: INSCRIPTION ON FACES 1, 2 AND 3.

could say whence they came, but we were told that squared stones were often extracted from the mound near the river.



## II. *Tell-Bashár and the Sajur Valley*

From Kellekli we went on to Birejik, and thence doubled back to Aintab, in terrible weather, which did not allow of excursions to mounds seen to right and left of an almost impassable road. The two most conspicuous of these lie, respectively, S.W. of Nizib in the valley of the Sinek-Deré, and near the village of Arul (*Arulis* of Ptolemy). From Aintab I proposed to descend the Sajur, visit Tell-Bashár, and cross Euphrates to Tell-Ahmar. When I was in Aintab in 1894, I bought a number of Hittite objects, now in the Ashmolean Museum at Oxford. (See *Recueil des travaux relatifs à l'Assyriologie*, etc., Vol. xvii, p. 26). These, as I was assured in every case, came from Tell-Bashár, about five hours down the Sajur. Before starting further south, however, we took the opportunity of visiting Tell-Dulukh, the site of Doliché, and ascertaining the fact that nothing early is to be seen on the large mound near modern Dulukh, in the quarries and tombs across the valley, or on the hill-top, where stands the venerated mosque-tomb of Dulukh Baba. I picked up, however, on the former, a broken greenstone celt. Such celts are said to be found there frequently, and inscribed gems are also reported. Making a détour to the village of San, we saw the walled pool containing sacred fish, which lies by the Aintab-Marash high road. The villagers could (or would) give no information about it, except that it was a *ziaret*. If the shrine of Zeus Dolichenus was on the Dulukh Baba hill, as seems likely, this pool at its foot is probably of very ancient fame as a preserve of sacred fish.

### (a) *The Site*

Riding from Aintab to Tell-Bashár, we saw a small mound, near the double spring of Selen-Bunar,  $2\frac{1}{2}$  hours out, and another some distance to the west of that point. Before we reached the Sajur bridge at Serambol, over which one of the main tracks from Aleppo and Bab to Birejik passes, the mound of Tell-Bashár rose into view, looming huge to the S.E. In the cemetery of Serambol are several squared basalt blocks. Cutting across a loop of the meandering river, we crossed again to the little village of Bashár, and there camped. The site lies about half a mile to the east. All that is to be seen upon it are high and narrow mounds marking the line of a

city wall, which encloses almost a complete oval somewhat larger than the horse-shoe at Jerablus. It shows conspicuous gateway gaps on the west and south. A huge Acropolis mound occupies almost all the northern segment of the oval, on the river side, but is not nearer the stream than about 200 metres. The Sajur, however, flows through a soft plain in a series of loops, and may well have changed its course often since antiquity. I suspect the rather abrupt fall immediately below the northern wall of the site is a former river bank. The Acropolis of Tell-Bashár is by far the most imposing mound which I have seen in North Syria. One-third as high again as the Acropolis of Jerablus, it occupies fully twice its area; and it must have been the strength of this eminence which attracted the Frank Counts of Edessa to it when driven west of Euphrates. There are considerable remains of their castle on the summit, notably of the gate on the south, whose flanking towers still stand to a height of several courses. The masonry is of mixed limestone and black basalt. Numerous traces of other buildings, and of cisterns, witness also to the Frank occupation. The site below is entirely under cultivation and devoid of superficial antiquities. The squared basaltic blocks on the Acropolis, and at Serambol and Bashár, would not by themselves prove the site Hittite; nor would the immense Acropolis mound and oval wall. But the extraordinary number of small objects found on the site by neighbouring villagers leaves no manner of doubt. Beside the seals, etc., bought by me in Aintab, in 1894, we now procured from the peasants of Bashár itself, besides a number of haematite and steatite beads, etc., about a dozen seals, all of obviously Hittite character. Nearly all of these were taken from the necklaces of women, and sold to us at our own price.

(b) *The Ancient Name of the City at Tell-Bashár*

With what known Hittite city, then, if with any, are we to identify Tell-Bashár. It is by so much the most important site in the Sajur valley that one thinks at once of *Pitru*, which the records of Salmanassar II place on the Sagura river. For example, in the year 854 B.C., the second of his reign, the Great King states that he crossed the Euphrates at Kâr-Šalman-Ašarid (a name given by himself to a native town on the left bank, also called Til-Barsip),

and, after receiving tribute from Carchemish, the Kummukh, etc., 'took *Asur-Utir-Asbat* which the Hatti call *Pitru*, which is on the Sagura on the farther side of Euphrates.' (*Keilinschriftliches Textbuch zum Alten Test*, ed. H. Winckler, I, p. 3.) In his third year the King records that he crossed the Euphrates again at the same place, and again took Pitru. (Obelisk of Nimrûd; see *Sammlung von Assyr. und Bab. Texten*, ed. E. Schrader, I, p. 173ff.) In the first expedition Salmanassar continued his way from Pitru to Halman (Aleppo). Pitru is known also from Egyptian records (see W. Max Müller, *Asien u. Europa*, pp. 98, 267), as a city of North Syria lying on the way to Carchemish. It may be placed, I think, with fair confidence, at Tell-Bashár.

Whether Pitru be rightly identified further with the Biblical Pethor (Num. xxii, 5: xxiii, 7; Deut. xxiii, 4), the city of Balaam, which was 'in Aram in the mountains of the East,' I must leave to others to decide. The description of Pethor in Num. xxii, 5, as 'by the river of the land of the children of (Balak the Moabite's) people,' must be taken in connection with that in Deut. xxiii, 4, where the town is called 'of Mesopotamia.' If so, we can only understand by the 'river' in question the Euphrates. But since, in any case, Tell-Bashár is only a little over twenty miles from that river, neither its situation (if it be Pitru) nor the ascription to 'Mesopotamia' is conclusive against its identification with Pethor if a certain geographical latitude in description be allowed to the Mosaic writers. It is worth notice that a town, Παφάρα, occurs in Ptolemy (*Geog.* V, 15), as, apparently, on a road from Aleppo (*Beroea*) and Bab (*Batnae*) to the Euphrates. It is otherwise unknown. Can this name by some corruption, be at once a reminiscence of *Pethor* and an anticipation of *Bashár*? Were the true reading in Ptolemy Παθάρα, the identification with both would be easy. In any case, *Bashár* is philologically not very remote from *Pethor*.

A conspicuous mound, called Akché-Huyuk (Turk) or Tell-Abiad (Arab), rises about two miles N.E. of Tell-Bashár. In the village near it Hittite seals have been bought. Another mound, of smaller dimensions, is passed about one hour on the direct road towards Mumbij. I picked up here a sherd of coarse ware with brown

hatchings on a buff ground. We met with no other mounds till we struck the Sajur again at the village of Khalid. About a quarter of a mile N.E. rises a large mound on the right bank. Tell-Khalid shows no superficial evidence of date; but in the village I procured some small objects; and a terra-cotta figurine of Ishtar type, grasping her breasts, which I published in *Annual of the British School at Athens*, XIV, p. 190, in connection with other terra-cottas bought at Mumbij.

Thenceforward, from the bridge at Akcheh down almost to the mouth of the Sajur, we saw from the right bank a long series of mounds on the opposite side, all of small dimensions and from one to three miles apart. Almost every one has either on it or close by a modern village, the successor of an ancient one, which lived by the cultivation of the narrow irrigated valley. At Kubbeh are two late tomb *stelae* showing eagles displayed similar to the common type of Hierapolis: but we noticed no other relics of antiquity on the lower course of the stream except the roughly-cut chamber-tombs in the cliffs near the mouth, which have been mentioned by Chesney and Ainsworth, and are related, in my opinion, to the site of Europus.

### III. *Tell-Ahmar*


From the mouth of the Sajur a number of mounds are visible on the farther bank of Euphrates. The nearest, which rises at the water's edge, about a mile down stream, was, we were informed, Tell-Ahmar, where, as our information went, was to be seen 'writing like nails.' Two ferryboats ply from a small village at the foot of the mound to serve the increasing waggon traffic which now takes the direct route from Aleppo to Urfa (see above, p. 169). The river is very broad at this point, and it was early afternoon ere we landed at Tell-Ahmar. There proved to be much more there than we had expected.

#### *The Site*

The site is outlined by narrow mounds. These evidently mark the line of a city wall and enclose a crescent larger than the oval at Tell-Bashár and *a fortiori* larger than the horseshoe at Jerablus. By rough pacing I estimated its diameters at about 1,500 metres



from east to west by 1,000 metres north to south. The interval between the horns of the crescent lies along the river itself, and seems to have been unwalled. Towards the eastern end of this interval (the Euphrates here flows nearly from west to east) rises the Acropolis mound on the river bank itself to a height of about fifty feet. It covers a smaller area than the Acropolis of Jerablus, and its summit offers a narrow table only some  $30 \times 15$  metres. As in the case of all the Syrian mounds, its angle of inclination is exceedingly steep. A cut has been made at the south-west corner, obviously by searchers for building-stone, and several squared basalt blocks have slipped down the cut towards the base of the mound. One of these appears to be the drum of a rough column; another has

deep grooves on the surface thus . From the western

and northern base of the mound a well marked platform runs forward into the city-site. Beneath this are concealed probably the remains either of a fortified approach or of an official residence. The modern village, a sparse collection of huts, straggles westwards along the river front, occupying perhaps one-twentieth of the whole site. The rest is about equally divided between cultivated land, fallow, and grass.

(a) In the city wall are two well-marked gaps. Through the easternmost of these passes a waggon track towards Seruj and Urfa. In the gap lie two broken winged lions of rude style. The heads are sculptured in the round, but the bodies are not detached from the block: the wings are merely incised on the flanks. The best preserved, that on the west side of the gate, stood when erect 2.72 m. from fore-paw to ear (Plate XXXVII, 1). The head alone measures 1.20 m. from ear to jaw-point. The jaws gape; and there is a ruff round the neck. On its inner, i.e. right, side was a long cuneiform inscription, now practically illegible. The eastern lion has the left side (which was the inner in its case) inscribed likewise, but the text, though broken, is in a far better state of preservation (Plate XXXVII, 2). Both lions have suffered from long exposure, and show on their surfaces groups of those little sunken cups, in which Arabs play games with pebbles. The inscription on the eastern lion, read from my impression, records no place-name, but is probably of Salmanassar II.\*

---

\* See Mr. King's note below, p. 185.

(b) Just inside the gate, in a shallow excavation, is to be seen part of a large round-headed *stela* in black basalt, which shows the head and upper half of a male figure wearing high *polus* and bearing a broken object in his clenched fist (Plate XXXVI, 4). From the peak of the cap to the point of the beard the figure measures 0.90 m. The head is much worn. A second fragment lying near shows the rest of the figure, draped to the feet. A third fragment, much defaced, has the head of a smaller figure, also wearing *polus*. There are three other fragments of relief, too small and imperfect for their character to appear. The large figure seems to have stood about 3.00 m. high.

(c) If the line of wall be followed north-westward, another gap will be met with about half way to the river. Through it a modern waggon-track runs which, I was informed, offers an alternative road for the first part of the way to Seruj. There is nothing to be seen in the gap itself; but on a low rise to left of the track, a hundred metres outside the wall, lie six broken blocks of black basalt, in and about a shallow excavation, the soil out of which has been thrown up all round. Five of these bear 'Hittite' symbols in relief on one or more of their faces, and three of them sculptures also, these being portion of a bull and of a male figure with upturned shoes, whose feet rest on the bull's head and back. All belong to a single oblong *stela*; but some parts are wanting. The whole is said to have been dug out some years ago and broken by the finder. A seventh fragment was known to my informants, but they could not, or would not, tell where it now is.

### *The Hittite Inscription*

I give a hand copy of the text, so far as it has been uncovered (Plate XXXVIII). This has been made by tracing over photographs of casts taken from excellent squeezes obtained by Miss Gertrude Lowthian Bell, to whom the photograph of one fragment, shown on Plate XL, 1, is also due. We had also taken squeezes, which are now in the British Museum; but, owing to the humidity of the season in 1908, they came out less successfully than those of Miss Bell, who revisited Tell-Ahmar at my suggestion in 1909. The tracing has been supplemented by comparison with

such photographs of the stones as were sufficiently clear to be of service.

In this copy the fragments of text are replaced in their original relation. This has been arrived at (1) by reconstituting the scene in relief whose blocks bear parts of the text on one flank: this scene (see Plate XXXIX) shows (A) the elbow and lower half of a draped male figure (B), who stands to left on a bull (C), a fragment of whose head only is preserved: (2) by observing the uninscribed surfaces which appear on the fragments, and so settling which are uppermost and which lowermost, of the panels of inscription. Such surfaces occur above the panels on the fragments A and D. The inscription on B and F is continuous round two faces of the *stela*. The small fragment D must be placed well to the left to leave room on the right for the beginning of the text, which is evidently lost. The exact position of fragment E is uncertain, but the direction of the animals' heads, &c., in its panels leaves no choice but to place it about where it is in Plate XXXVIII. It is the only fragment which shows the fourth side ('face 1') of the *stela*. About one-third of the text is lost or still buried. My copy has been compared with one made independently by Professor A. H. Sayce from the casts in the Ashmolean Museum, and is amended in certain points by his advice. It is much to be desired that this most important monument, bearing the longest Hittite text yet found, should be rescued from its present position and reconstituted at Constantinople.

The Tell-Ahmar *stela*, when complete, must have measured about 2 metres in height (each panel of text is about .20 m. high) and about .90 × .90 m. round the base. It tapered towards the top, but the apex (no doubt slightly rounded, as in the case of the Bor *stela*) is lost. The amount of tapering may be estimated by the fact that the uppermost panels of text measure on each face .17 m. less in length than the lowest panels.

The god (as he probably is), here represented standing on a bull, reappears in a relief recently found with others at Arslan-Tepé near Ordasu, district of Malatia. These reliefs were published from faulty photographs, by Professor J. Garstang in Vol. I, Plates IV, V, of these *Annals*, and I think it is worth while to reproduce the better photographs taken in 1909 by Miss Gertrude Bell (Plate XLI, Nos. 1-6). As I have never seen the reliefs, I make no comment

on them beyond remarking that nearly all the figures are of types familiar already at Boghaz-Keui, Fraktin, or Eyuk; that they evidently represent cult-scenes in which both a goddess and her son figure, as well as a winged deity, like that represented both at Yasili-Kaya and at Tell-Ahmar; and that in some respects (e.g. No. 5, the lion-relief) they are so Assyrian in style that they must fall late in the Hittite period. I have no measurements, but the scale is small, like that of the two Arslan-Tepé reliefs already known (now in Constantinople and Paris). Presumably all the reliefs belong to one dado-series taken from the approach to a palace or temple; and in some instances are carved on two faces of the same block.

*Other Hittite Sculptures at Tell-Ahmar*

(d) The following uninscribed slabs in and near the village are said to have been found on the Acropolis:—

1. A large block on the river bank S.W. of the village, measuring  $1.12 \times .80 \times .45$  m. and much worn. It shows two horse demons rampant on either hand of a conventional palm tree. One foreleg of each, ending in a human hand, grasps a frond of the tree just below the spring of the main plume. The other forelegs rest on the trunk lower down. Both horses wear headstalls. (Plate XL, 3.)
2. A broken slab of black basalt in the village, 1.00 long, worn nearly smooth. It shows two draped figures moving towards one another. That on the spectator's left shows a straight falling robe with fringe; that on the right, a skirt projecting forward. Both wear upturned shoes. The stone is too far gone for the photograph, which we took, to be worth publishing.
3. A basalt slab of T-shape built into a house. The broadest part measures .83 m. It shows a small bull moving to right. The animal is in a less heavy style than the bull on the inscribed *stela*. Our photograph was a failure.
4. A broken basalt slab lying in the open, west of the village; measuring  $.96 \times .94 \times .25$  m.; much worn. It shows two figures clad in tunics to the knee and upturned shoes, moving



to right and holding in both hands objects not now clearly to be distinguished, but probably sacrificial offerings. The hair of both falls in curls on their backs. The photograph reproduced on Plate XL, 2, was taken in 1909 by Miss Bell. This slab is probably part of a series to which belongs also No. 2 above.

5. A broken basalt block built into a door-jamb, and measuring  $50 \times 32$  m. It shows a forearm and hand rising from a boss, and the hand of the other arm, which rose from the same boss. The hands are empty. As the doorpost crossed the relief, we could get no satisfactory photograph.
6. A basalt block showing a winged and eagle-headed (?) genius in a well-known Assyrian attitude. This block was not seen by us, and we owe the photograph to Miss Bell. (Plate XL, 4.)

(e) I procured from the villagers several cylinders, seals and beads, which I hope to publish elsewhere with other Hittite objects of their class. A small steatite cow was bought on the opposite bank.

(f) We were informed that a broken slab, showing the legs of a man, existed some distance to the south near the river bank, but were unable to verify the report. At my request, Miss Bell made enquiries in 1909, and she reports that she found, half-way to the village of Kubbeh, a large white stone which had had some ornament, now indistinguishable, and a fragmentary Hittite inscription in relief. Her copy shows several well-known Hittite characters, but was too hastily made to be worth reproduction. Nearer to Kubbeh she came on a mound on which was lying the head of a stone lion, and, by digging, she found the body and legs carved in relief. The whole beast is of the same type as the gate lions at Tell-Ahmar, in Plate XXXVII above.

#### *The Ancient Name of the City at Tell-Ahmar*

Can this important site, which offers monuments both Hittite and cuneiform, be identified with any known early city? It ought certainly to prove to be one of those three left bank cities belonging to Ahuni son of Adini, which Salmanassar II raided in his second year before crossing Euphrates, and took and re-named in his

third. There were (beside Til-Barsip) Nappigi and Aligi.\* Can Tell-Ahmar, however, be Til-Barsip itself, which the Assyrian made a royal residence? The occurrence of gate-lions at Tell-Ahmar, belonging to Salmanassar's time, coupled with the great size of the site, raises a doubt whether Til-Barsip has been rightly placed at Birejik,† where there is no obvious sign of a Hittite site. The fact that a Hittite sculpture was found built into the walls of the mediaeval castle of Birejik proves, of course, nothing in view of the nearness of Jerablus, Kellekli, and other Hittite places, whence stone was doubtless brought to Birejik by the mediaeval builders. In the expeditions of both his second and his third year, Salmanassar, after crossing the Euphrates from Til-Barsip, seems to make his first important right bank capture at Pitru on the Sajur. If I am right in finding the latter at Tell-Bashár, it is an argument in favour of Birejik that Tell-Bashár certainly lies on the straightest road to Halman (Aleppo), whither the King proceeded in his second year; while it does not lie on any reasonable road at all from Tell-Ahmar to Aleppo. If we must suppose, then, that Salmanassar was making a bee-line for Halman, we shall agree in the identification of Birejik with Til-Barsip. But there is, of course, no particular reason for supposing so. The country on the right bank of the Euphrates, from far above Birejik to far below Tell-Ahmar, is all equally easy, and the Assyrian could march off any road he pleased, whither he would, to seize a rich prey; and it is as natural that he should have received the submission and tribute of Carchemish and the Kummukh, etc., at Tell-Ahmar, as at Birejik, the former site lying, indeed, nearer to Jerablus by some miles than the latter.

It may, therefore, I think, be regarded as an open question, to be solved perhaps by excavation, whether the important city, with monuments of the Hatti and also of Salmanassar II, which I have discovered at Tell-Ahmar, was not, in fact, Ahuni's capital, Til-Barsip, and Salmanassar's royal city, Kâr-Šalman-Ašarid. If not, then it should be one of Ahuni's other chief towns, either Nappigi or Aligi.

---

\* See Monolith Inscr. in *Sammlung von Assy. und Bab. Texten*, p. 163.

† See map in the *Sammlung*, cit. supra.

IV. *Hittite Sculptures seen at Aleppo*

On Plate XLII, I publish some Hittite monuments seen at Aleppo, partly by myself and partly by Miss Bell.

*No. 1:* A lion in black basalt, uninscribed, but of a distinctly Hittite type, which is built into a ruined structure within the enceinte of the castle. It is too much encased in masonry for accurate measurement.

*No. 2:* A small slab in basalt in the possession of M. Marcopoulos; provenance not stated.

*No. 3:* A broken eagle in basalt at the French Consulate; provenance not stated.

## NOTE ON THE INSCRIPTION UPON THE EASTERN LION AT TELL-AHMAR

By L. W. KING

Upon the body of the lion, flanking the east side of the principal city-gate at Tell-Ahmar, is a cuneiform inscription, of which Mr. Hogarth took an impression during his recent journey in Syria.\* The inscription is evidently much weathered, but considerable portions of twelve lines, at the beginning and end of the text upon the lion's body and right leg, can still be made out from the squeeze. The text appears to have been continued on the breast, but here the traces given by the squeeze are very faint and uncertain.

The beginning of the text contains an address to, or an enumeration of, various Assyrian deities (ll. 1-8); unfortunately the central portion, which gave the writer's name and the name of the city now represented by Tell-Ahmar, is wanting. But enough is preserved of four lines (ll. 17-20) to prove that the place was captured in the course of a successful campaign in Northern Syria by an Assyrian king, who, on re-building the city-wall, set up 'two exalted lions' in the easternmost gate of the city to commemorate his success. It is clear that the eastern gate was selected for the memorial, as this would be the gate by which the king would enter or leave the city on his way from or to Assyria.

Though the name of the king is not recorded, I think it very probable that he was Shalmaneser II. Slight peculiarities in the characters are suggestive of the ninth century; the description of the lions recalls work of the reign of Shalmaneser's father; and, finally, the introductory address is very similar to that in Shalmaneser's Monolith inscription.† He may well have captured the city during his campaign of B.C. 854, and, after fortifying it upon its

---

\* See above, p. 178 and Pl. XXXVII, fig. 2.

† See *Cun. Inscr. West. Asia*, Vol. III, Pl. 7. Note also the presence of Marduk in the pantheon, and compare his title with the phrase *abkal ilāni* (pl.) *bēl te-ri-s-te* in Shalmaneser II's Obelisk inscription, l. 9, where the god's name is obviously to be restored as Marduk. If we are right in ascribing the text to Shalmaneser II, we should probably place the setting up of the lions in some period subsequent to B.C. 851, when, in his character of suzerain, he made offerings in Marduk's temple at Babylon. The occasion may have been his second expedition against Damascus in B.C. 849, but the first capture of the city would probably have taken place in B.C. 854.



unprotected side with a wall of unbaked brick in the Assyrian manner, have held it as a frontier fortress and a base for his later western expeditions. Professor Sayce has suggested to me that Tell-Ahmar may mark the site of the city of Araziḳa; and this may well be the case, since Tiglath-pileser I describes it as 'in front of the land of Khatte.'<sup>†</sup>

What I have made out of the inscription from the squeeze may be rendered as follows:—

TRANSLITERATION	TRANSLATION
(1) (īlu) <i>Ashshur bēlu rabū shar ilāni</i> (pl.) [ . . . . . ]	(1) Ashur, the great lord, the king of the gods, [ . . . . . ] ;
(2) (īlu) <i>A-nu ushumgallu rish-tu-u</i> [ . . . . . ]	(2) Anu, the primeval ruler, [ . . . . . ] ;
(3) (īlu) <i>Enlil a-bu ilāni</i> (pl.) <i>bēl mātati</i> [ . . . . . ]	(3) Enlil, the father of the gods, the lord of the lands, [ . . . . . ] ;
(4) (īlu) <i>E-a ir-shu shar apsi pi-tu-u</i> [ . . . . . ]	(4) Ea, the wise, the king of the deep, who opens [ . . . . . ] ;
(5) (īlu) <i>Marduk abkal ilāni</i> (pl.) <i>bēl te-ri-te</i> [ . . . . . ]	(5) Marduk, the leader of the gods, the lord of laws, [ . . . . . ] ;
(6) (īlu) <i>Nabū dupshar E-sag-gil a-khi-iz</i> [ . . . . . (īlu) <i>Sin</i> . . . . . ]	(6) Nabū, the scribe of Esagil, who holds [ . . . . . ; Sin, . . . . . ]
(7) <i>bēl aḡi mu-nam-mir m[u-shi]</i> (īlu) <i>Ish-tar be-lit</i> [ . . . . . ]	(7) lord of the diadem, brightener of the night; Ishtar, the lady of [ . . . . . ]
(8) <i>rabitu(tu) khi-rat kar-rad ilāni</i> (pl.) <i>mār (īlu) Enlil</i> [ . . . . . ]	(8) the mighty, bride of the hero of the gods, the son of Enlil [ . . . . . ]

[The traces of the following eight lines are faint and uncertain on the squeeze.]

(17) [ . . . . . ] <i>um-ma-na-te-shu</i> [ . . . . . ]	(17) [ . . . . . ] his troops [ . . . . . ]
(18) <i>ush-ma-na-shu ni-sir-ti sharru-ti-shu</i> [ . . . . . ]	(18) his camp, his royal treasure, [ . . . . . ]
(19) <i>a-na abullī II nēshē(e) širūti</i> (pl.) [ . . . . . ]	(19) For the great gate two exalted lions [ . . . . . ]
(20) <i>al bēlu-ti-ia Ninua</i> (KI) [ . . . . . ]	(20) my lordly city of Nineveh [ . . . . . ]

<sup>†</sup> The phrase is *sha pa-an (mātu) Kha-at-te*; see *Annals of the Kings of Assyria*, p. 85.

## WHO WERE THE ROMANS? A NOTE ON SOME RECENT ANSWERS

By T. E. PEET

Mommsen's judgment that the Romans were not a mixed people has met with rude shocks in the last few years. In 1903, Professor Conway read a paper to the International Congress at Rome\* in which, arguing from the data of the dialects, he suggested that patricians and plebeians were different peoples, corresponding to what he calls the -NO people and the -CO people respectively. In a paper read by Professor Ridgeway† to the British Academy on April 24th, 1907, considerations based on customs and language were adduced to prove (1) that the plebeians were of different stock, and (2) that the former were of the same race as the builders of the dry-land pile-dwellings (*terremare*) in North Italy, while the latter were northern invaders (*Sabini* or *Umbri*) from over the Alps.

It is not my intention to find fault with the arguments brought forward by either writer to prove mixture of race in the Roman people; the archaeological evidence of the cremation and inhumation burials in the Forum‡ is in any case sufficient to place this beyond doubt. What I do wish to insist on is that both writers have made an archaeological blunder of the first importance, and that this has led them to an unsound conception of the ethnological data in primitive Italy. Not until this is set right can we hope to approach the problem with any chance of success.

We shall first consider Professor Ridgeway's paper. One of the main arguments for his claim that the Romans were a mixed people is the fact that two methods of burial, cremation and inhumation, were practised by them. So far, so good; but according to Professor Ridgeway, the plebeians were the race of the *terremare*-folk and the patricians were the *Umbri*. Now, every Italian archaeologist knows that both these peoples cremated. How, then, does Professor Ridgeway account for inhumation in Rome? Simply by upholding, contrary to all the facts, that the *terremare* people inhumed!

---

\* *I due strati nella popolazione Indo-Europea dell'Italia antica.* Rome, 1905.

† *Who were the Romans?* *Proceedings of the British Academy.* Vol. III.

‡ e.g. *Notizie degli scavi*, 1906, pp. 253 sq.

Let us trace his ethnology from the beginning. It is based mainly on Dionysius of Halicarnassus, whom he is inclined to defend against criticism. In primitive Italy, he finds two main elements, the Aborigines or Ligurians, and 'the great tribes of Siculans and Umbrians.' 'The Umbrians and Siculans,' he says, 'seem to have been closely related; the Siculans being the earlier wave which had advanced down from the Alpine regions, whilst their kindred Umbrian tribes were constantly pushing them on further south.' (p. 1) Surely this is a strange and unwarrantable conception of the *Siculi*. Nor is it quite in keeping with the statement of Dionysius—to whom Professor Ridgeway attaches such credence—that the Siculans were the first inhabitants of Rome. Above all, how are we to explain away the consideration that—as Professor Ridgeway admits—the Siculans inhumed, whereas their 'kinsmen' the *Umbri* cremated? No, the evidence of archaeology—so far as it leads to ethnological conclusions at all—shows that the 'Siculans' were settled in Sicily, and perhaps parts of South and Central Italy, long before the earliest immigrations of 'Celto-Umbrians' from over the Alps, and that they were an entirely different people.

Professor Ridgeway next proceeds (p. 3) to assign the various types of remains found in Italy to their owners. The Villanova culture he ascribes to the *Umbri*. Then follows a series of extraordinary statements with regard to the *terremare* or pile dwellings of the Po valley. *Firstly*, that the earliest stage of human culture in Northern and Central Italy is that of the *terremare*. This is not true, for we have in various parts of these districts numerous traces of a neolithic and an eneolithic period, both earlier than that of the *terremare*. Out of dozens of examples, I may instance the Ligurian and Apuan caves, Alba Cuneo, Rivoli, Breonio and, later, Remedello. *Secondly*, that 'The antiquities found in these habitations (*terremare*) shew that their earliest inhabitants were still in the neolithic period.' This is again not true. No *terremare* has ever been dated to the neolithic age except on the ground that in that particular excavation no objects of metal were found, a thoroughly valueless criterion, if we take into consideration the general character of the whole *terremare* culture. *Thirdly*, that 'their dead

\* Note that for Professor Ridgeway a 'Difference in burial rites indicates *prima facie* a difference of race,' p. 4.

were buried in a contracted posture lying on the side or sometimes sitting.' I cannot imagine where Professor Ridgeway got this impression. If there is one thing certain in Italian prehistory, it is that the *terremare* folk invariably cremated. Cemeteries have repeatedly been found side by side with *terremare* settlements containing burnt bones laid in urns of *terremare* pottery. The text-book examples are those at Castellazzo,\* Monte Lonato† and Casinalbo‡. *Fourthly*, that 'like remains have been found in Latium.' After careful enquiry, I can only say that archaeology knows nothing of them. *Fifthly*, that the people who inhabited the *terremare* were the Aborigines or Ligurians. This I cannot undertake to discuss in detail here. I have worked the question out in full elsewhere,§ and content myself with summarising the results. In the neolithic period, North Italy was inhabited by a dolichocephalic people who inhumed their dead. At the end of the neolithic period, a new race, who cremated, entered North Italy, probably from Switzerland, and built pile-dwellings in some of the lakes. Early in the full bronze age a second invasion took place, probably from the Danube Valley. The newcomers were probably related to the earlier immigrants. Like them, they cremated, but they preferred to build their pile-structures on dry land and to surround them with a moat. These, and not the *Liguri*, were the people of the *terremare*.

It will thus be seen that Professor Ridgeway labours under five serious delusions with regard to the people of the *terremare*; and that it is these, and these alone, which enable him to identify this people with the Aborigines or 'Ligurians,' and to suppose that the *terremare*-folk were the earlier element in the Roman people, whereas 'Ligurians' and *terremare*-folk were, in reality, two distinct races.

To pass now to his later element in the Roman people, namely, the *Umbri*. These, according to him, are a race of invaders from the north, who introduced into Italy the 'Villanova' civilisation, which had its centre at Bologna. I first notice an inaccuracy of date. Professor Ridgeway says (p. 4)—'There can be little doubt that the Villanova culture had commenced in the Bronze Age, for

---

\* *Rendiconti della R. Accademia dei Lincei*, Nov. 26th, 1898.

† *Notizie Degli Scavi*, 1878, p. 75.

‡ BRIZIO, *Epoca preistorica*, p. lxxxi.

§ *Stone and Bronze Ages in Italy*, pp. 492-510.



in a considerable number of cemeteries\* belonging to that period the dead were cremated and not inhumed as was the case in the preceding epoch' (*terremare*). The significance of this is clear. Professor Ridgeway knows that there are cremation-cemeteries of bronze age date, but instead of admitting them to be those of the *terremare*-folk, he explains them away by bringing in the *Umbri* and making the Villanova period begin during the bronze age, a theory which is contrary to all the facts. Now it is far from certain that the Villanova culture was due to the immigration of a new race at all. In any case, it is most unlikely that such a race ever penetrated into Latium, and formed the later element in the Roman people. To understand this, we must turn once more to the archaeological data in North and Central Italy.

In the neolithic period we saw a dolichocephalic people who inhumed their dead, and lived in caves or huts. These form the substratum of the population in Latium as elsewhere. If we follow the custom of most Italian archaeologists, we may call them '*Ligurians*.' It is indeed perfectly possible that these formed the earlier element in the Roman people, but they were not *terremare*-folk. Then followed the two great invasions of pile-dwellers, to which I have already referred, one at the end of the neolithic age, and the other in the bronze age. These two peoples, who both cremated their dead, and were doubtless closely akin to one another, I follow Pigorini in calling *Italici*. Now Pigorini has proved that at the end of the bronze age some of these people left their homes in the Po valley and descended into Latium.† The evidence is the fact that the first period of the early iron age in Latium is clearly a development of the civilisation of the *terremare*. The burial rite is cremation, and the pottery is a continuation of that of the *terremare*.

Hence we have in Latium in the early iron age two strata in the population, '*Ligurians*' and *terremare*-folk, and since, as I shall shew, there is no archaeological evidence that any further immigration into Latium took place in this period, it is possible that, if the Romans were a mixed people at all, they were a mixture of these two. If this were so, the patricians would probably be the

---

\* As a matter of fact there is only one inhumation cemetery of bronze age date in N. Italy, that of Povegliano, and this has a simple explanation.

† *Bull. Pal. It.*, XXVI, p. 21.

conquering *terremare*-people, and the plebeians the conquered 'Ligurians.'

Thus the archaeological facts have led us to conclusions very different from those of Professor Ridgeway, for whom *terremare*-folk and 'Ligurians' were one and the same people, and were both represented in Rome by the plebeians.

Who, then, are Professor Ridgeway's *Umbri*? According to himself, they are the Villanova\* people. Now, among archaeologists two views are held with regard to the Villanova civilisation. The first, long held by Pigorini,† is that it developed naturally out of the culture of the *terremare* and in the hands of the same people. The other view, held by Brizio,‡ Modestov§ and others, is that it was introduced by an invading race (*Umbri*) from the North. I do not yet attempt to decide between these two views, though I have devoted some study to the question, and hope to devote more during the next few years. Fortunately, it is immaterial for our present purpose, for if the first view is maintained there were no new invaders at this period (the end of the bronze age) at all; and if the second is accepted, the '*Umbri*' of Villanova never descended into Latium. In Latium, in fact, there was developing contemporaneously with the Villanova culture around Bologna, an early iron age civilisation linking on to that of the *terremare*, and due, as we have already seen, to *terremare*-folk who had settled there at the end of the bronze age. With the origin, then, of the early iron age civilisation of Rome and its surroundings, the Villanova culture had nothing to do, and it was not until later times that it influenced it even slightly. The basis of the civilisation of Latium contained, in fact, simply two elements, the first due to the original 'Ligurians' who had lived there in neolithic times, and the second brought in by invading *terremare*-folk (Pigorini's *Italici*) at the end of the bronze age. Later, of course, were added the influences due to the Etruscans and to early Greek trade on the coast, but with them we are not concerned in discussing the present question.

On archaeological grounds there is therefore no place for

---

\* Note that Professor Ridgeway uses Villanova in the narrower sense, as a name for the iron age culture around Bologna, and to avoid difficulties I have followed him in this way throughout this paper. To an Italian archaeologist, the word has, of course, a much wider signification.

† *Bull. Pal. It.*, XXIX, p. 207, Note 50; XXVI, p. 22.

‡ *Epoca preistorica*, p. cxxii.

§ *Introd. à l'hist. romaine*, pp 287 ff.

Professor Ridgeway's 'Umbrians' in early Rome at all, and they can hardly, therefore, be identified with the patrician element.

Professor Conway tentatively suggests the same conclusions as Professor Ridgeway,\* though on quite different grounds, and his theory meets with the same answer. His remarkable knowledge of Italian dialect and early tribe-names has enabled him to perceive that a very large majority of these names end in either *-NI* or *-CI*. He takes these as evidence of the existence of two great and distinct stocks in Italy, which he calls the *-NO* folk and the *-CO* folk. The latter, Volsci, Hernici, Osci, etc., are nearly all restricted to a small district in Central Italy mainly round Rome, and are generally found in marshy places. Hence he gets the equation *-CO* folk = plebeians = *terremare*-folk. Moreover, D'Arbois de Jubainville and Kretschmer believe that *-S-CO* is a termination common in districts which *Liguri* have inhabited. Hence, Professor Conway equates *Liguri* to the terms of the equation above, and adds the statement that the Volsci, 'men of the marshes' and pile-dwellers, probably inhumed their dead, which is precisely what, if they were pile-dwellers, they were most unlikely to do. The *-NO* folk, on the other hand, are of course the Safini, or Sabini (Professor Ridgeway's Umbri), and they become a part of the Romani, viz., the patrician element. Thus, in regard to the patrician 'Umbri' also, Professor Conway arrives at Professor Ridgeway's conclusions, which we have already seen to be inconsistent with the archaeological evidence.

Finally, to make all clear, I exhibit side by side with each other the equations reached by Professors Ridgeway and Conway, and those which are suggested by the archaeological data:—

A.	B.
Professors Ridgeway and Conway.	Archaeological data.
1. PLEBEIANS.	1. PLEBEIANS.
= Ligurians.	= Ligurians.
= <i>terremare</i> -folk.	= <i>cave and hut</i> folk.
= inhumation folk.	= inhumation folk.
2. PATRICIANS.	2. PATRICIANS.
= Umbrians.	= Italic (of Pigorini).
= <i>Villanova</i> folk.	= <i>terremare</i> -folk.
= cremation folk.	= cremation folk.

Or possibly vice versa, for the reasons given below.

---

\* CONWAY, op. cit., p. 15.

I do not offer the second set of equations as the final solution of the origin of the Romans: but merely as more accurate than the other. For in the other, as I have shewn, the terms equated simply are not equal. My intention throughout has been to shew not that archaeology can at present solve the problem, but only that it can, and does, shew Professor Ridgeway's solution to be incorrect. This much is certain. It is also certain that 'Ligurians' and *terremare*-folk formed two, and probably the two, elements in the early Roman population. That these can be respectively identified with plebeians and patricians seems to me uncertain but possible, and, moreover, I only equate the patricians with the *terremare*-folk because the *terremare*-folk were conquering invaders. Whether they were still the dominant class in early Roman days is, however, a question which we cannot answer. Certainly in several parts of Italy the tendency was for the invaders to become gradually absorbed in the original inhabitants, or even inferior to them. It is quite possible that this happened in Rome, and that the once victorious *terremare*-people became the plebeians, and the conquered 'Ligurians' the patricians.

Further discoveries may shew the problem to be far more complicated than we at present imagine, and we must be ready to alter our ideas accordingly. But I cannot conceive of any possible archaeological discovery which could reinstate as truth those of Professor Ridgeway's views which the archaeological evidence at present condemns so decisively.





## INDEX

- Abydos Excavations, 1909, preliminary description of the principal finds—125  
 Adalia, on the south coast of Asia Minor—145, etc.  
 Africa, the ancient home of malaria—110  
 Aleppo, Hittite Sculpture at—184  
 Allen, T. W.—158  
 Allbutt, Prof. Sir C. Clifford—97  
 Amphorae, fragments of, found at Chester—61  
 Angel, 1471-83, London Mint—2  
 Anopheline mosquitoes—37, 98, 100  
 Ashmolean Museum—174  
 Asshur-nazir-pal, campaign of, 884 B.C.—144  
  
 Balak the Moabite—176  
 Barnard, Prof. Francis Pierrepont—1  
 Barrows, classification of—46  
 Beads, haematite and steatite, bought from the peasants of Bashar—175  
 Bell, Miss Gertrude Lowthian—179  
 Bell, Mr. Hesketh, Governor of Uganda—35  
 Bird Cult of the Old Kingdom in Egypt—49  
 Birmingham Halfpence—18  
 Black Death—35  
 Book of the Dead—49, 50  
 Bracelets of Gold—129  
 Bronze daggers—128  
 Broad, Dr. W. H.—91  
 Brizio : *Epoca preistorica*—75, 189, 191  
 Bulle, Dr., *Orchomenos*—151, 156  
 Bulic, Monsignor, Curator of Museum of Spalato—27  
 Bumpstead, T. B.—120  
 Burrows, R. M., *Discoveries in Crete*—158  
 Butmir—30  
  
 Cairns—46  
 Calder, W. M.—91  
 Carchemish and its neighbourhood—165 ff.  
 'Cartwheel' Coinage—22, 24  
 Cave of the Bats, at Matera—73, 74  
 Celli, Prof. A.—97  
 Charm to destroy an enemy—131  
 Charm for Snake-bite—131  
 Cherokee Charms—131  
 Clubb, Dr., of Liverpool Public Museums—91  
 Conway, Prof.—187 ff.  
 Cist-tomb, containing skeleton of youth buried in contracted posture—152  
  
 Clinch, George—46  
 Coins found in the excavations at Chester—63  
 „ Catalogue of a teaching Collection of representative English—1  
 „ of late Roman and Saracen issues—143  
 Coptic Writing on walls of Christian church—125  
*Cuniculi*, ancient drainage system of the agro Romano—101  
 Cuneiform Inscription on Eastern Lion at Tell-Ahmar—185  
  
 D'Arbois de Jubainville—192  
 Davis, Nineteenth Century Token Coinage—22  
 Davis, John B.—131, 134  
 Dea Febris : A study of Malaria in Ancient Italy—97  
 Delitzsch, Prof.—143  
 Devil's Punch Bowl—48  
 Dimini vases, black on red—154  
 Dionysius of Halicarnassus—188  
 Diorite, bowl of—127  
 Disease and History, by W. H. S. Jones—33  
 Dolmen pottery—79, 80, &c.  
 Double Axe, cult of the—49  
  
 Eagle, sculpture in basalt, at Aleppo—184  
 Early Civilization in North Greece : Preliminary Report, 1909—149  
 Earthen hut-circles—46  
 Effertz, Dr. Otto, Government Vaccinator in Mexico—35, 121, 122  
 Engraved gems—143  
 Etruscans, their drainage works in Latium—101  
  
 'Ferling' Noble—2  
 Fever : Shrine and Altar dedicated to the goddess of—98  
 Figurines from Asia Minor, prehistoric—145  
 Flint Axe of palaeolithic type, from Chester—63  
 Folklore from Oklahoma—131, 132, 133, etc.  
 Fowler, T. W. Warde—97  
 Fosse, of Roman Chester—62

- Gate-lions at Tell-Ahmar—183  
 Galen, Kuhn—115, 118  
 Gardun, village in Dalmatia—27  
 Garstang, John, D.Sc.—56, 125, 139  
 Genovese, Dr. F.—97, 110  
 Glass found in Chester Excavations—65  
 Gold ring—129  
 Gold jewels, XVIIIth Dynasty—129  
 Greece, malaria in ancient—33; in modern—37; Excavations in North—149  
 Groat, hammered, milled—6, 7  
 Grotta dei Pipistrelli (South Italy), cave-dwellings and burials—73ff.  
  
 Harrington, Lord, farthings made by—18, 19  
 Hagia Triada sarcophagus—51  
 Hall, H. R., on Cretan and Egyptian cults—51  
 Harrison, Miss, on 'Bird and Pillar Worship'—51  
 Henzey, Mont Olympe—159  
 Hittite inscription—179, 185; sculpture at Aleppo, 184  
 Hogarth, D. G.—165, 185  
 Horns of Consecration—49  
 Hypnotic suggestion practised in the Temples of Asclepius—42  
  
 Isis and Osiris myth—50  
 Ishtar—143  
  
 Jerablus, Jerabis—165, 166  
 Jerome, T. Spencer—97, 118  
 Jezzerine in Bosnia, pottery of—27 ff.  
 Jones, W. H. S., on *Disease and History*—33; on *Malaria in Ancient Italy*—97  
  
 Kala-azar, effects of this disease in Asia—35  
 Kaleyards at Chester—54  
 Kellekli, Hittite Stela (block)—173  
 Khet-priest of the Double Axe—49  
 Kinch, Dr.—159  
 King, L. W.—185  
 Koerte, A.—164  
 Kuchler, C. H.—17, 23  
 Kretschmer, Dr.—192  
  
 Lanciani, Ancient Rome—108, 109  
 Leake, Col.—159  
 Lenormant, *La Grande-Grèce*—110  
 Lianokladhi, in North Greece, Excavations at—149  
 Ligurians—190  
  
 Lion in black basalt, at Aleppo—184  
 Lions, winged, flanking gateway at Tell-Ahmar—178  
 Liver Eater, The, a Cherokee story—131  
  
 Macedonia, prehistoric mounds in—159  
 Macculloch: Malaria—120  
 'Maille' Noble—2  
 Malaria, date of introduction into Greece—39; in Rome during the first century A.D.—44; influence upon Greek History—33; effects in Italy—97 ff.; allusions in Latin Literature—111; bibliography—123  
 Matera, prehistoric finds at—72, 73  
 Max Muller: *Asien u. Europa*—167, 176  
 Maundrell—169  
 Mayer, Max—72, 79, 82, etc.  
 Megalithic remains of Great Britain and Ireland, scheme of classification—46  
 Mexican Indians: 50 to 90 per cent. die from Malaria—35  
 Mommsen—187  
 Modestov—191  
 Mint Marks—2  
 'Minyan' ware of Orchomenos—152  
 Mirror from Abydos, with handle in the shape of a woman—129  
 Monte Timmari, cremation necropolis in South Italy—81  
 Mounds, prehistoric, in Macedonia—159  
 Mycenaean stirrup-vase—29  
 Myres, John L.—139, 146  
 Murgia Timone, fortified village site in South Italy—76  
  
 Nelson, Copper Coinage of Ireland—20  
 Neter-Khet—126, 130  
 Newberry, Prof., on a Bird Cult, 49; restorations of Jar Sealings—130  
 Newstead, Robert, on the Roman Walls of Chester—52  
  
 Ooktana, the Great Horned Serpent—134  
 Oppenheim, Dr. Max Freiherr von, *Der Tell Halaf*, reviewed—139 ff.  
 Orchomenos, in Boeotia—38  
  
 Palaeolithic implement found at Chester—70  
 Paterson, A. M.—91  
 Peet, T. E.—72, 145, 187  
 Peloponnesian War—39  
 Pepy, royal name of, on stone cylinder seal—127  
 Pepper Gate at Chester—57  
 Pepper, as a cure for ague—120  
 Peruvian bark—108

Plague, at Athens in 430 B.C.—34, 35, 39  
 'Plug-money'—15  
 Pomptine Marshes, drained in 160 B.C.—103  
 Port wine, a favourite prophylactic against  
 malaria—120  
 Portugal-pieces—15  
 Pottery found in Chester Excavations—64;  
 in Thessaly—149 ff.; in Macedonia  
 —159 ff.  
 Price, F. G. Hilton, obituary notice of—94  
 Pyramid Texts—49

Radimsky, Dr.—27, 30  
 Relief of Sargon at Balawat—172  
 Ridola, Dr. Domenico, researches at Matera  
 —72 ff.  
 Ridgeway, Prof.—187 ff.  
 Ripac, in N.W. Bosnia—27 ff.  
 Roman Concrete Foundation in Bridge  
 Street, Chester—67  
 Roman Wall at Chester—52  
 Romans, ethnology of the—187 ff.  
 Rome, cult of goddess of Fever at—98;  
 marshy surroundings—101; ancient  
 epidemics, 107; malaria at—113 ff.  
 Ross, Major—33, 97  
 Rose Noble—2  
 Rose Taverne, afterwards as Will's Coffee  
 House—5  
 Royal Seal Impressions, in clay—125, 126,  
 130

Sacred fish, walled pool containing, by the  
 Aintab-Marash high road—174  
 Sakkara—49  
 Salmanassar II.—178, 182; *see* Shalma-  
 naser.  
 Sammlung von Assyr. und Bab. Texten—  
 183  
 Samian Ware, at Chester—61; at Jerablus  
 —167  
 Sargon's Palace at Khorsabad—143  
 Sayce, Rev. Prof. A. H.—180, 186  
 Scarab-shaped Seals—51  
 'Scarabs'—51  
 Seals from Abydos, Impressions of—130  
 Seals of Hittite character bought from the  
 peasants of Bashar—175  
 Schmidt, Dr. Hubert, on pottery from  
 Macedonian mounds—159

Serra d'Alto, fortified village-site in South  
 Italy—77  
 Shalmaneser II.—185; *see* Salmanassar.  
 Shovel-board shilling—3  
 Sinj in Dalmatia—27  
 Skulls, human, from Asia Minor—91  
 Sleeping Sickness—35  
 Sluys, Battle of—2  
 Sophocles, malaria mentioned for the first  
 time in—39  
 Sotiriadhis, Dr.—150  
 Spalato, prehistoric vase in the museum of  
 —27, etc.  
 Stais, Dr.—157  
 Stela of black basalt at Kellekli—172; with  
 Hittite inscription at Tell-Ahmar—179,  
 185  
 Stelae, funerary, from Abydos—18  
 Stonehenge—48

Tell-Ahmar—185, 186  
 Tell Halaf, in Northern Mesopotamia,  
 excavations at—139  
 Terra-cotta figure vase of a kneeling girl  
 —129  
 " of Ishtar type—177  
 Terremare of North Italy—187 ff.  
 Testoon or shilling—2  
 Tiglath-Pileser I.—186  
 Tiles found in Chester Excavations—64  
 Thompson, M. S. *See* Wace  
 Tokens—4, 5  
 Tommasi-Crudeli—101  
 Traeger, Dr.—159 ff.  
 Tsountas, Prof.—86 ff.  
 Thessaly, Excavations in—149  
 Tsani Maghoula, Excavations at—152

Veiled Goddess at Tell-Halaf—142  
 Villanova culture in Italy—188 ff.

Wace, A. J. B., and M. S. Thompson, on  
 Excavations in North Greece—149 ff.  
 White Horses, hillside sculpture—48  
 Woodward, A. M., on a prehistoric vase at  
 Spalato—27  
 Wolf Tower at Chester—55  
 Wr, bird deity in Egypt—49  
 Wyon, Thomas, Chief Engraver of His  
 Majesty's Seals, 1812—24





LIVERPOOL UNIVERSITY INSTITUTE OF  
ARCHAEOLOGY

Annals of Archaeology and Anthropology

Vol. II. No. 2. June, 1909

The current Part of these ANNALS contains the following articles :—

Professor NEWBERRY's short paper on a *Bird Cult of the Old Kingdom* of ancient Egypt, follows the same method as was applied to the 'Cult of the Double Axe' in a previous communication (*Annals*, Vol. I). The appearance of the Egyptian hieroglyphs suggests that the bird itself was a swallow; and this view is supported by Egyptian ritual and legend; and also by the superstitious reverence with which the swallow is still regarded among the Egyptian peasantry.

A postscript to this paper corrects misapprehension as to the writer's view of the significance of this and other likenesses between Egyptian and Cretan cults.

Mr. ROBERT NEWSTEAD describes a *Recently Discovered Section of the Roman Wall at Chester*, which has been exposed, and most considerably preserved and protected by the National Telephone Company, during the erection of their new Chester offices. The new section throws much light on the course of the Wall of Chester in the neighbourhood of the Wolf Tower and the south-east angle of the Roman city.

A *Palaeolithic Implement* found here in the surface soil forms the subject of a separate note. This find is very remarkable, since it is commonly supposed that Britain was not habitable in Palaeolithic times north of a line from the Severn to the Wash.

Mr. T. E. PEET's essay on *Prehistoric Finds in South Italy* deals mainly with the explorations conducted for a number of years by a member of the Italian Parliament, Dr. Domenico Ridola, in the neighbourhood of Matera, a district lying east of Brindisi and north-east of Taranto. The finds range from the Neolithic Age to the early part of the Age of Iron, and illustrate many successive changes of artistic culture and burial customs. This article also is very fully illustrated.

Drs. PATERSON and BROAD describe in detail some *Human Skulls from Sisma*, an ancient mining district near Iconium, in Asia Minor. The variety of human types which they represent illustrates the complexity of the problems raised by the remains of the ancient population of that region.

PROFESSOR GARSTANG contributes a brief *Obituary* notice (with portrait) of Mr. F. G. Hilton Price, the late Director of the Society of Antiquaries, a distinguished supporter of the Liverpool Institute of Archaeology, and Treasurer of its Excavation Fund.

N.B.—Among the contents of the September number of the ANNALS will be a summary of Professor Garstang's recent *Excavations in Upper Egypt*; a further study of *Malaria in Ancient Italy*, by Mr. W. H. S. JONES; and notes on the *Ethnology and Prehistoric Archaeology of Corsica*, by Dr. W. L. H. DUCKWORTH.











































